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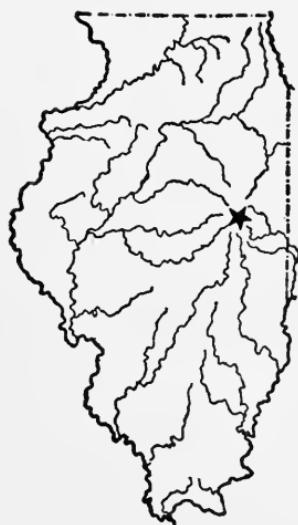
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UNIVERSITY OF ILLINOIS
Agricultural Experiment Station

BULLETIN No. 326

DEVELOPMENTAL STUDY OF A
RURAL-URBAN TRADE AREA

BY H. W. MUMFORD, C. L. STEWART, H. C. M. CASE,
AND P. E. JOHNSTON



URBANA, ILLINOIS, MAY, 1929

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FOREWORD

There has been a desire on the part of Chambers and Associations of Commerce in the cities of the Middle West, in recent years, to be of some constructive assistance to the farmers of their trade areas. Particularly has this desire been expressed during the present prolonged period of farm depression, and it has led to action in a variety of ways. Some of the efforts of urban organizations to assist in the betterment of farm conditions have been helpful, and others ill-advised and harmful. Out of it all, however, has come a growing appreciation of the fact that the farm problem is not a simple but a complex one, and that while the generally recognized remedies might help they could not correct the difficulties that surround the farm business.

Because the farmers' difficulties are complex, it is obvious that the first step in organizing a constructive program for an area is to ascertain some of the basic facts that have a bearing on the local situation. The impression prevails, particularly in cities among people who are not working with farmers' problems, that there are some rather major farm adjustments that need to be made, and many opinions are expressed as to just what these major adjustments should be. While it is evident that there are a considerable number of things in connection with better farm practice that need more general adoption, it is obvious that any major adjustments such as, let us say, a complete change in the general type of farming in an area, should not be made until a careful study of the situation indicates that the change is desirable. Furthermore, it is important that surveys or studies made to determine what adjustments in the farming of an area are desirable should be undertaken by such agencies and in such a way that farmers will have confidence that the conclusions are sound, and that the changes suggested are made with a view to improving the farm situation rather than merely to the further building up of the business of the cities.

When such a study has been made and recommendations and conclusions determined, then it is important that the various institutions and organizations representing farmers, business men, and consumers cooperate to the end that each may take the responsibility for accomplishing those things which can be accomplished most effectively with the groups they represent. This joining of efforts and differentiating of activities is essential if desirable results are to be accomplished.

It is recognized that farmers and city people have many problems in addition to those covered in the present study. Business enterprises involved in the local handling of farm commodities, whether produced on the farms of the area or shipped in, and whether destined for urban or rural consumption, may well be studied from time to time to determine how efficiently they are meeting the needs of the community.

More efficient merchandizing service for farmers as regards goods for household use and supplies used directly in farm production are also proper objects of study. Short-time credits during periods of production and marketing, and long-time credits for permanent improvements in the facilities for production and marketing likewise are problems deserving attention. Turning to the field of public policies, more attention might well be given to studies of highway systems connecting farms and markets, public school systems, and the administration of sound regulations for the protection of the health and well-being of farm and city populations. More facts are needed as to the benefits and burdens of taxation as they affect the urban and rural portions of the area. The adequacy of various social agencies from the standpoint of the common interests of the rural and urban groups is also a matter for attention.

Business and other civic groups, both in city and country, can well afford to accept the challenge which these problems offer. By selecting for critical examination first one phase of the community's problems and then another, possibly reexamining conditions as changes seem to warrant, a community can keep its developmental program on a factual foundation.

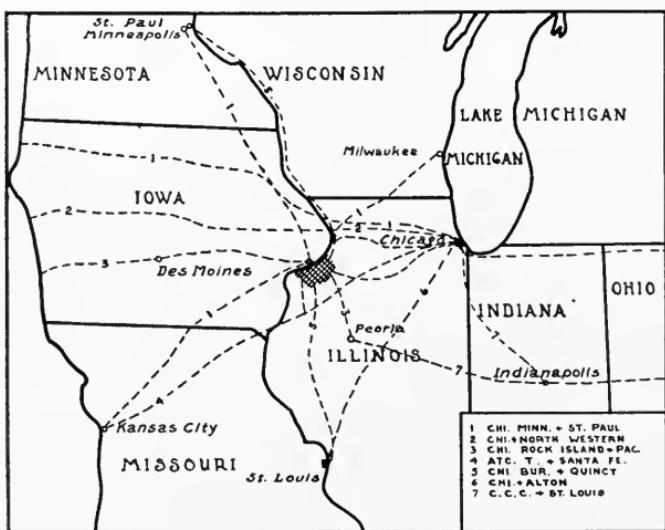
The development of the present study was the outgrowth of the desire of the Moline Association of Commerce to do what it could, from a city angle, to contribute to the improvement of agricultural conditions in the farming area in which it is situated. Following preliminary correspondence and discussions between the College of Agriculture of the University of Illinois and the officers of the Moline Association, a conference of the various agencies that it was believed would be interested in such a project was arranged in July, 1928.

Representatives of the Rock Island County Farm Bureau, the Rock Island County Home Bureau, the Moline Association of Commerce, the Rock Island Chamber of Commerce, the University of Illinois, the U. S. Department of Agriculture, the Illinois Chamber of Commerce, and the Chamber of Commerce of the United States were present at this or subsequent conferences. At the first conference it was agreed that before attempting to make recommendations looking toward the improving of farm conditions in the area, it would be necessary to secure more information concerning the local situation.

The Moline Association of Commerce took the initiative in pledging the financial aid for the study and asked the Agricultural Experiment Station of the University of Illinois, because of experience and previous interest in such work, to prepare plans, select the personnel, direct the study, and interpret the results. This bulletin sets forth the principal pertinent facts, with interpretations and recommendations, resulting from the study.

The successful completion of a study of this kind is dependent upon the hearty cooperation of all interested agencies and upon the help of technical specialists in the fields covered. To the agencies already mentioned, and to the public school officials and teachers in the area, acknowledgment is made for cooperation in gathering new information and for helpful suggestions. Recognition is also due the various departments of the College of Agriculture and Agricultural Experiment Station, all of which made definite contributions to the study. In this connection the names of the following members of the staff call for special mention: G. L. Jordan, J. W. Lloyd, C. A. Brown, J. J. Pieper, R. C. Ashby, L. F. Rickey, and Grace B. Armstrong. K. H. Myers, E. G. Fruin, R. I. Nowell, R. H. Reuss, C. B. Shuman, and W. W. Wilcox were temporarily employed to help in gathering and assembling the field data.

THE AUTHORS



LOCATION OF AREA STUDIED

DEVELOPMENTAL STUDY OF A RURAL-URBAN TRADE AREA

BY H. W. MUMFORD, C. L. STEWART, H. C. M. CASE,
AND P. E. JOHNSTON¹

Most cities of Illinois, like those of many other parts of the United States, are directly concerned with the agriculture of the region in which they are located. They have recognized this, but perhaps not so immediately as formerly since, owing to various economic developments, farm depression is not so quickly reflected to trade and industry as it once was. When a large proportion of farmers were able to deliver their products directly to urban consumers, there was opportunity for interchange of points of view, and it was possible for producers and consumers to keep informed of one another's needs. With the developments that have given rise to various trade agencies, however, and with the increasing ratio of urban to rural population, producers and consumers have had less occasion for immediate contact, and the need for carefully directed efforts to make their interrelations better understood has become increasingly felt.

A careful analysis of the farming situation in a local trade area, showing what the level of farm earnings is and how the maturing of American agriculture has brought new production problems, should enable the city dweller to understand better the problems of the producer. At the same time, the local producer, by knowing what the consumer wants and what his preferences are for products of certain grades delivered in certain conditions, may frequently so order his farm production as to meet more nearly the demands of the consumers and to profit by so doing.

OBJECT AND PLAN OF STUDY

The purpose of this study was to determine what, if anything, might be done to develop or improve the agriculture of a rural-urban area in northwestern Illinois, so that ultimately the farmers of the area, with the cooperation of the cities, might obtain a more adequate income and a more satisfying farm life. The study deals, on the one hand, with the production and marketing of products grown on farms in the area and, on the other hand, with the consumption from month to month of farm products, whether grown within the area or shipped in from outside.

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Investigators collected facts from consumers, dealers, transportation agencies, farmers, and others interested in consumption, distribution, and production of agricultural commodities in the area. New information was obtained from three sources: (1) from accounts kept by farmers in the area; (2) from questionnaires filled out by teachers and pupils in the rural schools; and (3) from schedules which special field workers used for recording facts and opinions obtained in interviews and from records opened to them for inspection. The schedules used by the special field workers covered the following subjects:

- (a) Consumer demand for eggs, poultry, dairy products, potatoes, other vegetables, and fruits, as indicated by statements of housewives and of proprietors of hotels and restaurants.
- (b) Inbound and outbound shipments of farm products moved by various types of transporting agencies.
- (c) Availability and extent of use of warehouse facilities, including cold storage plants, for storing farm products.
- (d) Volumes of farm products purchased and sold by wholesale and retail dealers, the quality and condition of local produce handled, and related information.
- (e) Marketing of farm products thru roadside stands.
- (f) Monthly wage and salary payments to employees by important industrial concerns, reflecting the seasonal and other changes in the earnings of these purchasers of farm products.

In addition to the above there was already in the possession of the Experiment Station considerable information regarding the farming of the area. This has been used in rounding out the study. Information from the United States Census and from other agencies has also been drawn upon.

In showing the extent to which local demands for farm products are being met by local production, the study points the way both to adjustments which the farmers of the area might profitably make in their production and marketing, and to activities which might be undertaken in the cities to develop better markets for locally grown products.

DESCRIPTION OF TRADE AREA

Location. The trade area included in the study may be described as centering in Rock Island, Moline, East Moline, and Silvis, in north-western Illinois, and to some extent in Davenport and other points in eastern Iowa (Fig. 1). Except where otherwise indicated, all references to "the area" relate to Illinois territory that is in local trading relations with Moline and adjoining cities. Since these four cities are situated so close together it would not be to the point, even if it were possible, to isolate the trade contacts of any one of them for special study.

Across the Mississippi river to the north and west is Davenport,¹ Iowa, whose bridge connections make possible considerable interstate trade, both wholesale and retail. Along the Illinois side of the river, the cities are located in string formation reaching from west to east and northeast, and the only bridges open to highway traffic across the

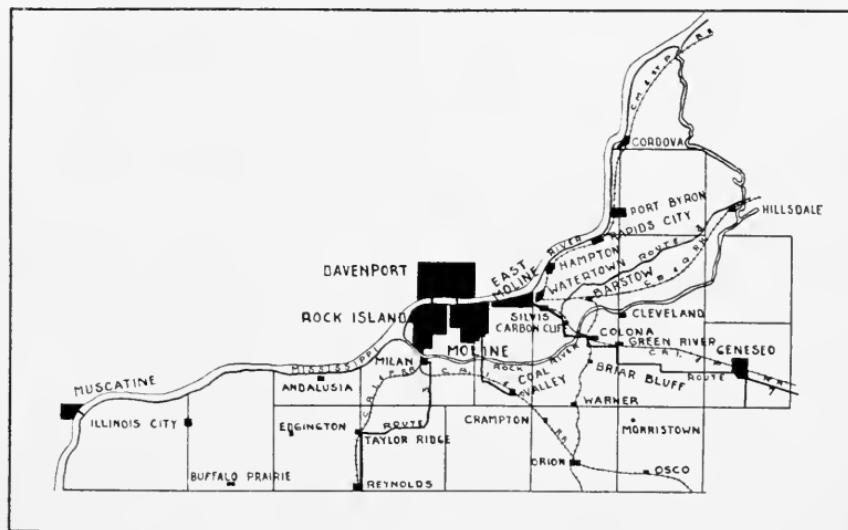


FIG. 1.—LOCATION OF SHIPPING POINTS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS

The above map shows both rail and truck shipping points in the agricultural area covered by the present study. Muscatine and Davenport, Iowa, are included since they are direct receiving points for considerable produce from farms on the Illinois side of the river.

Mississippi river between Muscatine and Clinton are those at Davenport. Highway traffic from the Illinois side enters Rock Island and Moline from the south over two bridges across the Rock river, one connecting Rock Island with points to the southwest and the other tapping a farming area south of Moline. Thru Silvis and East Moline there are highway connections with the southeast, east, and northeast. A few east-and-west thorofares which connect the business sections of the four cities on the Illinois side carry a large proportion of the traffic. In few trade areas is there such a series of retail points. There is a tendency, therefore, to localize certain classes of trade which might otherwise be concentrated near the centers of the cities.

Soils. The rivers and other physical features which count so heavily in determining the layout of the cities have likewise influenced

¹The name "Quad-Cities" and the adjective "Quad-City" are sometimes used to indicate collectively Davenport, Rock Island, Moline, and East Moline.

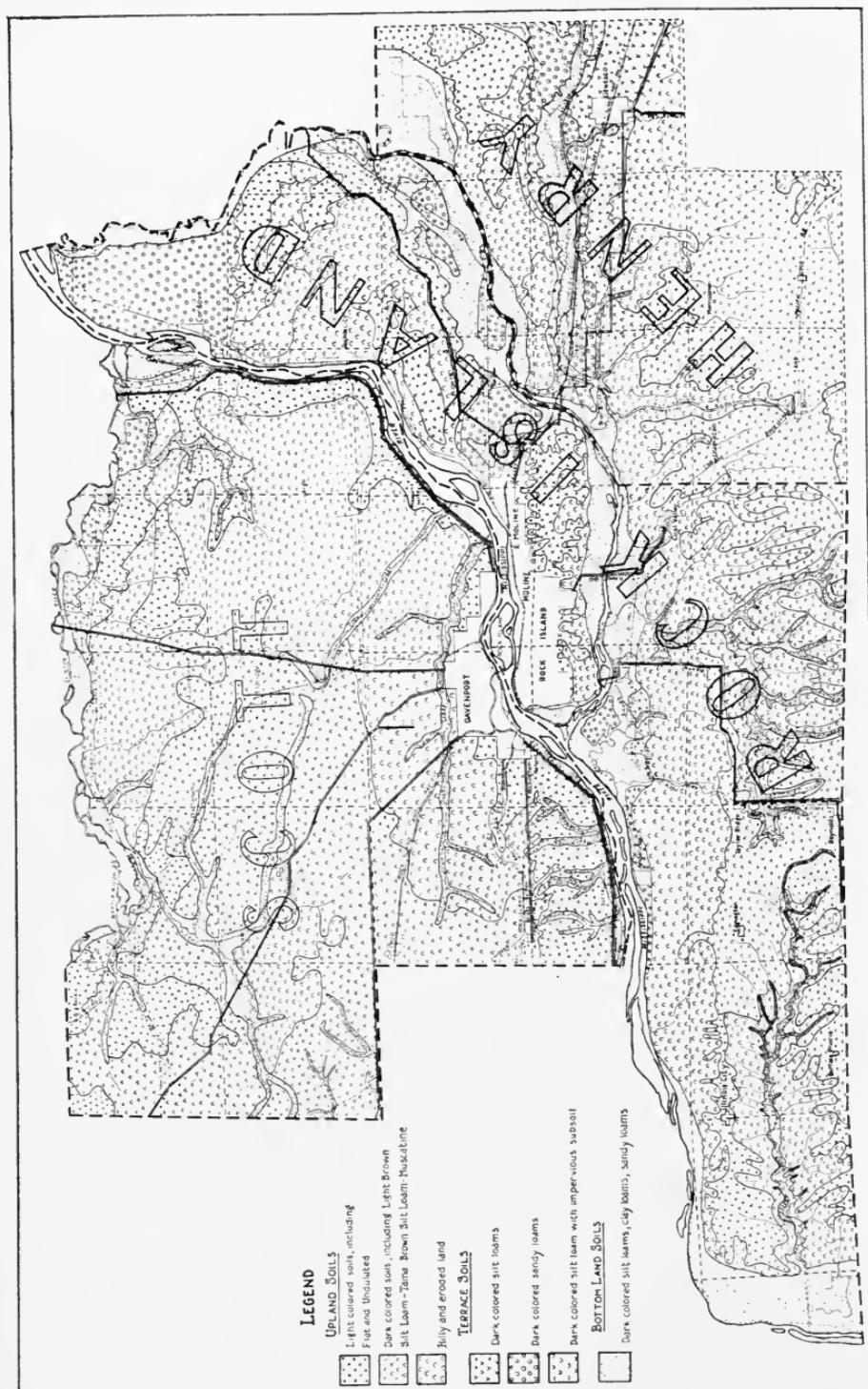


Fig. 2.—Soil Map Showing Diversity of Soil Conditions in Close Proximity to the Trade Area

the soils and topography of the farming district. This applies to the Iowa side of the area (detailed consideration of which is for the most part beyond the scope of the present analysis) as well as to the Illinois side, and is reflected in the accompanying soil map (Fig. 2). Along the river bottoms occur dark-colored silt, clay, and sandy loams in narrow strips. Across the river to the north, and in the eastern and central parts of Rock Island county hilly and eroded terrace soils are found. Those sections, therefore, contain considerable pasture land adapted to dairying. In the central and northern parts of Scott county, Iowa, the southern part of Rock Island county, and in most of Henry county, which lies to the south and east of Rock Island county, dark-colored soils, including brown and light brown silt loams are found extensively. These sections are adapted to general farming.

Crop and Livestock Production. In Rock Island county, of the total land area five-sixths was in farms in 1924, and of this 60 percent was devoted to crops, the rest of the farm land being used mainly for pasture. The emphasis upon crops was even larger in Scott and Henry counties (Appendix, Table 23).

The proportion of the crop area in Rock Island county in 1924 devoted to grains was 74 percent; to hay, 18 percent; and to other crops, 8 percent. The concentration upon grain was higher in Scott county and still higher in Henry county. The hay area in Scott county was a larger proportion of the total crop area than in Rock Island county, but the proportion of land in alfalfa and clovers was larger in Rock Island county than in either of the other two counties. Henry had a small proportion of land in both the leguminous and non-leguminous hays. The proportion of land devoted to miscellaneous crops was larger in Rock Island county than in either Henry or Scott counties.

Speaking generally, Rock Island county emphasizes livestock of several kinds to a degree much beyond most of the state. In this county in 1925 the number of animals per 1,000 acres of farm land was as follows: work animals, 40; dairy cows, 36; other cattle (including dairy animals except milk cows), 50; sheep, 12; hogs, 302; and chickens, 945 (Appendix, Table 24).

That farming in this area is devoted mainly to the production of staple crops and livestock products is further indicated by the fact that grain and hay crops in Rock Island county in 1924 occupied about 97 percent of the land in harvested crops other than that used for home gardens. Potatoes occupied about 1 percent of the crop land, while the production of apples and peaches accounted for the use of about 1 percent, leaving only about 1 percent devoted to the production of other fruit and vegetable crops for sale.

Population. In few communities of Illinois has there been a more rapid growth in total population since 1890 than in Rock Island county. In point of numbers, the rural population has been more and

TABLE 1.—NUMBER OF CHILDREN AND ADULTS, BY NATIONALITIES AND INCOME GROUPS, IN 458 FAMILIES OF EAST MOLINE,
MOLINE, ROCK ISLAND, AND SILVIS, ILLINOIS, 1928

Nationality or race and income groups ¹	Number of families	Number of children (under 12 years)	Number of adults	Percentage by nationalities	Children per family	Adults per family	Persons per family	Percentage by nationalities 1920 Census ²
Native white	345	320	1,008	75.3	.9	2.9	3.8	81.9
\$1001-\$1500	27	19	55	5.9	1.3	2.0	2.7	...
\$1001-\$1500	41	54	107	8.9	1.3	2.6	3.9	...
\$1501-\$2000	114	115	279	24.9	1.0	2.4	3.4	...
\$2001-\$3000	96	85	291	21.0	.9	3.0	3.9	...
\$3001-\$5000	54	41	216	11.8	.8	4.0	4.8	...
\$5001-\$10,000	10	6	48	2.2	.6	4.8	5.4	...
Over \$10,000	3	...	12	.6	...	4.0	4.0	...
Boligan	33	38	81	7.2	1.2	2.5	3.7	4.3
Swedish	23	10	63	5.0	.4	2.7	3.1	7.6
German	15	10	50	3.3	.7	3.3	4.0	3.2
Jewish	7	4	30	1.5	.6	4.3	4.9	...
Negro	13	7	40	2.8	.5	3.1	3.6	...
Italian	9	20	23	2.1	2.2	2.6	4.8	...
Others	13	15	46	2.8	1.2	3.5	4.7	2.2
Total	458	424	1,341	100.0	.9	2.9	3.8	100.0

¹Families were classified by the enumerators on the basis of interviews with housewives. When housewives were clearly of foreign birth or parentage, the families were listed accordingly.

²Based on total population of Moline and Rock Island.

more overshadowed by the growth of urban centers (Appendix, Table 25). As compared with 1910, 1900, and earlier dates, the United States Census of 1920 showed a much more rapid rate of growth in Rock Island county than in Scott or Henry counties. The growth was mostly in the larger cities. Population outside of incorporated places declined in the majority of townships in all three counties.

In the investigation of consumer practices, made as part of the present study, information was obtained concerning the earning capacity of various groups within the population of these cities and also upon the size and composition of households. Some of this information is shown in Table 1.

Of 458 records taken 113, or 25 percent, were from housewives other than native whites, the Belgian, Swedish, and German elements being present in considerable numbers. Households above average in size were found among the Jewish, Italian, German, and miscellaneous foreign-born groups. The number of children for each household was largest among the Italian and Belgian groups. Among the native-born, the households having a yearly earning capacity between \$5,000 and \$10,000 had most members, but the households having an earning capacity between \$1,000 and \$1,500 a year had the largest number of children.¹ In fact, the households above \$2,000 in income had less than one child on the average, thereby differing little from those having incomes of less than \$1,000. Part of the explanation for the larger incomes in families of larger size lies in the presence of more adult members to bring in earnings.

The number of children shown here is not to be confused with the total number of living children per married couple, for the figures include only the children still at home.

Of the total of 1,765 people in the 458 families interviewed, the number of children under 12 years was 424, or 240 in 1,000 of population. According to the U. S. Census there were in Illinois in 1920 238 children under 12 years of age per 1,000 people, and in the United States as a whole, 258.² The 1928 figures for these cities are thus seen to be not greatly different from the 1920 figures for Illinois and the United States, but the Moline and Rock Island data for 1920 for children under 15 years of age—a range three years wider—discloses a different situation. In Rock Island in 1920 there were 239 children under 15 years of age in 1,000 population and in Moline 243, as compared with 257 for the sixteen largest cities of Illinois outside of Chicago, 291 for Illinois as a whole, and 317 for the United States.³

¹Servants were included as members of households, but their incomes were not included.

²U. S. Census, 1920, Part II, Population, pages 168 and 211.

³U. S. Census, 1920, Part II, Population, page 210. The corresponding percentage for the United States was 31.7 (page 169 of Census).

If the 458 households included in the 1928 survey were in this respect representative of all Moline and Rock Island, there must have been some tendency since 1920 for these cities to have a ratio of children to adults more nearly up to the state and national averages. In any event, it is probable that in comparison with the rural portions of the trade area, these cities have a smaller proportion of their population of youthful years. This is in line with a widespread tendency for the number of young people of grade and high school age to be small in cities and large in rural districts.

A comparatively small number of females are included in the urban population of this area. Among seventeen Illinois cities outside of Chicago included in the 1920 Census report on sex distribution¹ Moline stood first in proportion of males to females, having 1,126 males for every 1,000 females, and Rock Island with 1,049 males to 1,000 females stood fourth. The fact that the industrial activities of these cities are devoted so largely to the production of farm machinery and railway equipment goes far to explain the demand for male workers. However, the predominance of males was not so great in 1920 as in 1910 in either Moline or Rock Island.

Urban Wages and Employment. The period selected for the study (September 1, 1927, to August 31, 1928) was fairly representative of the period since 1924 in the matter of wage incomes received by employed workers in these cities. Figures for five companies hiring 7,246 employees in 1927 show the numbers employed in 1924 to have been 89 percent of the number in 1927; in 1925, 93 percent; in 1926, 98 percent (Appendix, Table 26). In the case of three companies the average amount paid to salaried employees in 1928 was \$2,098, and to other employees, \$1,395 (Appendix, Table 27). The salary indicated was lower than in either of the preceding four years, having been highest in 1927, in which year it was 5 percent higher than in 1928. In the case of non-salaried employees, the average amount paid in 1928 was higher than in 1924 and 1927, but lower than in 1925 and 1926. The monthly average number of persons employed by five companies in 1924-1927 was not at any time more than 7 percent above or below the yearly average, and the average monthly wage paid to these employees kept within equally narrow bounds. Seasonal variations were not marked at any time from 1924 to the date of the study.

In brief, the present study deals with significant aspects of the consumption, marketing, and production of agricultural products during a period of fairly normal urban wage and employment conditions in a trade area centering in industrial cities in which there has been rapid increase in the number of people, many of them drawn from other communities, some of them from other countries.

¹U. S. Census, 1920, Part II, Population, pages 119 and 120.

INBOUND AND OUTBOUND SHIPMENTS OF FARM PRODUCTS

In order to get a general view of the demands of this area¹ for agricultural products and of the extent to which local production fails to meet such demands, information concerning shipments into

TABLE 2.—QUANTITIES OF SELECTED PRODUCTS SHIPPED INTO AND OUT OF SHIPPING POINTS IN THE AREA, FROM SEPTEMBER 1, 1927 TO AUGUST 31, 1928

Product	Inbound shipments	Outbound shipments	Product	Inbound shipments	Outbound shipments
<i>Grain and hay</i>			<i>Fruits</i>		
Corn, bushels.....	202 510 ¹	78 000 ¹	Apples, bushels.....	23 929	.....
Oats, bushels.....	3 750	30 000	Peaches, bushels.....	23 826	.....
Wheat, bushels.....	1 658	87 280	Pears, 100 pounds.....	1 902	.....
Barley, bushels.....	.....	9 000	Berries, 100 pounds ..	10 508	.....
Rye, bushels.....	.....	16 500	Other fruits, 100 pounds	7 493	.....
Hay, tons.....	1 166	297			
<i>Meat animals</i>			<i>Vegetables</i>		
Cattle, cars.....	166 ¹	555 ¹	Cabbage, 100 pounds..	5 382	.....
Hogs, cars.....	3	2 360	Celery, 100 pounds...	2 567	.....
Sheep, cars.....	11	31	Lettuce, 100 pounds..	6 311	.....
<i>Eggs and poultry</i>			Melons, 100 pounds ..	7 392	.....
Eggs, 30 doz. cases...	11 611	3 636	Onions, 100 pounds...	2 681	21 273
Dressed poultry, 100 pounds.....	200	981	Sweet potatoes, 100 pounds ..	1 951	.....
Live poultry, 100 pounds.....	307	558	Tomatoes, 100 pounds	1 431	53 200
<i>Dairy products</i>			White potatoes, bushels.....	285 133	4 547
Raw milk, gallons....	1 138 031	.....	Other vegetables, 100 pounds.....	27 394	.....
Cream, gallons.....	193 462	340 236			
Butter, 100 pounds...	7 782	.....	<i>Miscellaneous</i>		
Cheese, 100 pounds...	3 777	.....	Commercial feeds, 100 pounds ..	20 123	155
Evaporated milk, 100 pounds.....	4 773	2 265	Seed, 100 pounds ..	5 130	3 210
			Oleo, 100 pounds ..	3 408	.....
			Limestone, tons ..	5 940	18 540
			Fertilizers other than limestone, tons ..	199	.....

¹The inbound shipments of corn are believed to have been heavier than usual and those of cattle lighter than usual during the year ended August 31, 1928. Yields of corn were much below the average in 1927 (see page 145). During much of the period included, the price of feeder cattle was high enough to discourage feeding in an area already short of corn. Outbound shipments of corn and cattle are naturally affected to some extent by the same causes.

and out of the area was obtained from railroad companies and other transportation agencies. The results of this study, for the twelve-month period from September, 1927, to August, 1928, are summarized in Table 2. Significant data were also collected for the months from January to August, 1927, as shown in Tables 29 and 30 of the Appendix, where the detailed figures summarized in Table 2 are also given.

During each of the twelve months from September, 1927, to August, 1928, shipments of livestock from the shipping points in the area were larger than the shipments of livestock into these points. Poultry and eggs, grain, feed, seed, and vegetables showed larger

¹For the purposes of this section, the trade area includes all of Rock Island county and the northwest seven townships of Henry county. The shipping points from which information was secured include all those shown in Fig. 1 except Osco, Orion, Crampton, and Warner.

TABLE 3.—SALES PER FARM AND PURCHASES OF FEED, 110 FARMS IN THE AREA, SEPTEMBER 1, 1927, TO AUGUST 31, 1928

Product of farm	Sales			Purchases of feed				
	Farms reporting	Amounts	Value	Percent	Farms reporting	Amounts	Value	Percent
Hogs, pounds...	88	15,095	\$1,356.70	42.9	..	..	..	..
Beef cattle, pounds...	47	8,000	1,010.35	32.0	..	..	..	..
Veal calves, pounds...	65	340	45.00	1.4	..	..	..	..
Dairy cattle, pounds...	27	..	42.38	1.3	..	..	..	..
Milk, pounds...	13	4,500	94.44	3.0	..	..	..	..
Butterfat, pounds...	61	401	181.88	5.8	..	..	..	..
Meat and lard...	5	..	..	..	..	..	..	..
Poultry, pounds...	72	383	82.84	2.6	..	..	..	..
Eggs, dozens...	75	346	103.85	3.3	..	..	..	..
Corn, bushels...	17	74	64.00	2.0	60	405	\$351.00	71.1
Oats, bushels...	20	71	35.00	1.1	33	39	19.46	3.9
Wheat, bushels...	13	29	38.00	1.2	..	..	..	..
Hay, tons...	18	1.2	16.70	.5	28	1.35	19.05	3.9
Vegetables...	10	..	..	..	..	..	..	..
Fruits...	9	..	74.00	2.4	..	..	..	..
Bran, cwt...	..	..	..	..	26	3.9	7.84	1.6
Middlings, cwt...	..	..	..	..	24	2.8	6.36	1.3
Mixed feed, cwt...	..	..	..	..	47	12.6	43.97	8.9
Tankage, cwt...	..	..	..	..	46	11.5	46.02	9.3
Total value...	..	..	\$3,158.20	..	..	..	\$493.70	..

quantities shipped out than in only at the seasons of the year when supplies resulting from local production were at their highest points. In the case of fruits the inbound shipments were in excess of the outbound shipments during all seasons of the year.

Taking the year as a whole, the most pronounced tendency for outbound shipments to exceed inbound shipments was shown in the case of hogs, rye, barley, wheat, oats, tomatoes, and onions. On the other hand, the tendency for inbound shipments to exceed outbound shipments was most pronounced in the case of raw milk, cheese, oleo, fertilizer other than limestone,¹ potatoes, melons, cabbage, lettuce, celery, sweet potatoes, and other vegetables, berries, peaches, pears, apples, and other fruits.

FARM PURCHASES AND SALES

The extent to which the local farms have been contributing to the flow of farm products into and out of the area is indicated by the records obtained from 110 typical farms in the area (Table 3).

These 110 farms sold an average of \$3,158 worth of farm products and purchased \$494 worth of feed from September 1, 1927, to August 31, 1928. The receipts from the farms were distributed as follows: hogs, 43 percent; cattle, 34 percent; dairy products, 9 percent; poultry and eggs, 6 percent; grain and hay, 5 percent; and miscellaneous crops, including fruits and vegetables, 3 percent. Eighty-eight of these 110 farms sold hogs and 47 sold beef cattle.

Sixty farms purchased corn and 33 purchased oats. Of the purchased feeds, corn made up 71 percent of the total value. During the year the purchase of corn exceeded sales by 331 bushels per farm, and over 3,000 pounds of commercial feeds were purchased per farm. The purchase of all feeds exceeded the sale of feed crops by \$378 per farm. The situation in this year was due largely to the fact that the yield of corn in Rock Island county in 1927 was only 33 bushels per acre as compared with a seven-year average yield of 39.2 bushels.²

Records over a period of years show that the value of grain and other feed crops sold in the area about balances the purchase of feed, tho there is normally quite an exchange of feed among farms within the area in any year. On a group of about 50 farms in this section of the state during the past five years the sales exceeded purchases of grain and feed crops in two years while the purchases were in excess of sales in three years.

¹Much of the limestone quarried near East Moline is finely ground for farm use. In the year in question over three times as many carloads of limestone were shipped out of the trade area as into it.

²From Crop Estimating Service, Illinois Department of Agriculture and U. S. Department of Agriculture cooperating.

TYPES OF FARMING IN THE AREA

On the basis of the agricultural commodities produced and sold from farms, Illinois may be divided into eight farming-type areas, as shown in Fig. 3. While in any one of these areas wide differences will be found in the type of farming followed, the production of the majority of the farms is of the nature indicated.

The area under consideration is divided between two farming-type areas, in both of which livestock production is important. To the north and east dairying and beef and hog production are important sources of income, while to the south beef cattle and hogs predominate. The importance of livestock is explained in part by the fact that 25 percent of the area is untillable and suitable mainly for pasture. The kinds of crops grown on the tillable land are in turn influenced by the demand for feed for livestock.

A good market for whole milk and dairy products is provided by a population of approximately 160,000 people living in Rock Island, Moline, East Moline, and Silvis on the Illinois side of the Mississippi river and in Davenport and Bettendorf on the Iowa side. The productive soil lying back from the river, most of which is tillable, furnishes an abundant supply of feed crops for the production of meat and other animal products.

The lack of transportation facilities in the southwest part of Rock Island county makes it desirable to convert the bulky feed crops of that area into livestock products as a means of reducing transportation costs. The comparatively large amount of untillable land in this part of the county encourages the production of beef cattle, while the natural adaptation of the tillable land to corn encourages the feeding of both beef cattle and hogs.

The fact that in Rock Island county 74 percent of the cows milked are of dairy breeds shows the effect which the proximity of a large population center has had on the types of farming followed in the area. In Henry county only 56 percent of the cows milked belong to dairy breeds. Cream and butterfat make up a larger part of dairy sales in Henry county than in Rock Island county.

NOTE.—There are a number of factors that help to determine the type of farming in any area. They will vary in their relative importance in the different parts of the country. These factors may be divided under three heads as follows: (1) natural factors, (2) artificial factors, and (3) biological factors. The natural factors include topography, soil conditions, temperature, rainfall, and drainage. The artificial, or man-made, factors include transportation, available markets, density of population, machinery development, available capital and labor, character of people, land tenure, legislation, cycles of over- and under-production, and competition with other areas. The biological factors include plant and animal diseases, parasites and insects. While most of these factors have a permanent influence on the type of farming, part of them, such as some plant and animal diseases, may exert only temporary influence.

Accurate records kept by 44 farmers in the area in 1927 indicate that 89 percent of their receipts for that year were from livestock and livestock products, while 11 percent were from crop sales, including sales of fruits and vegetables (Appendix, Table 32).

The change that takes place in type of farming as the distance from a population center increases is shown in a study of 117 farms



FIG. 3.—TYPES OF FARMING FOUND IN DIFFERENT PARTS OF ILLINOIS, AS SHOWN BY PRODUCTS SOLD

The area included in this study is divided between Farming-Type Areas 2 and 3, in both of which livestock and livestock products are the principal sources of farm income.

in Wethersfield township, Henry county, forty miles from Moline, also made in 1927 (Appendix, Table 33). In this township 73 percent of the farm income was from livestock and livestock products, while 27 percent came from the sale of crops, which is more from crops than is found in the area closer to the population center.

In Rock Island county, where 90 percent of the land in harvested crops was in corn, oats, and hay, 75 to 95 percent of the farms reported growing these crops. Nearly 70 percent reported the production of potatoes, but these were grown mostly for home use; in fact few

- Area 1. Major—Dairying
Minor—Mixed farming and vegetable production
- Area 2. Major—Mixed livestock farming (dairying, beef cattle, hogs)
- Area 3. Major—Beef cattle and hogs
Minor—Grain (much of the grain sold is bought by local farmers); some fruit in the south part.
- Area 4. Major—Grain farming
Minor—General livestock
- Area 5. Major—General farming (corn leading cereal)
- Area 6. Major—General farming (corn and wheat leading cereals)
Considerable fruit in western side of area
- Area 7. Major—Wheat and dairying
Minor—Mixed farming, with some vegetable and fruit production
- Area 8. Major—Mixed farming. Leading products on different farms: fruit, redtop, timothy, dairy products, livestock, corn, vegetables, and wheat

farmers reported growing any potatoes or other vegetables for sale. The prevalence of small farm orchards and of very few commercial fruit farms is indicated by the large number of farms reporting fewer than 30 apple trees per farm.

About half of the farms in Rock Island county in 1925 were less than 100 acres in size (Appendix, Table 34). These farms, however, make up less than 20 percent of the total area reported in farms. The average farm contains 121 acres, but the greatest number of farms are included in the group ranging from 100 to 174 acres in size. One



FIG. 4.—ONE OF THE BETTER FARMSTEADS IN THE AREA

The kinds of buildings represented here are typical of those found on many livestock farms of the area.

hundred ten farmers supplying special information reported an average of 156 acres per farm, and 44 farmers who kept financial records reported 223 acres per farm. Most of the small farms are near the cities, and frequently some members of the family are employed away from the farm for at least a portion of the year. The predominating type of farm in the area, which produces the great bulk of farm products sold, is well over 100 acres in size.

There is little evidence of clear-cut changes in crop¹ or livestock production in this area as a whole during the past thirty years. The number of cows over two years of age has shown no appreciable change from 1900 to 1925 except some change from beef cows to dairy.² Likewise the number of swine seems to have remained fairly constant. The acreages of wheat, barley, and rye increased during the war period and dropped back again, altho the acreage of wheat is still larger than in 1910. There has been a reduction in the total acreage of hay cut, but a marked increase in the acreage of alfalfa and clovers.

¹See Appendix, Table 35.

²The number of cows two years old and over were as follows: 1900, 14,698; 1910, 15,700; 1920, 14,859; and 1925, 14,042 (U. S. Census).

The acreage of potatoes has been reduced by one-half since 1900. There was a big increase in the acreage of vegetables grown for sale from 1920 to 1925, altho the land devoted to either potato or vegetable production is a small part of the total area.

Recently the growing of tomatoes and onions in the southern part of Rock Island county has been increased because of the demand from a canning plant at Muscatine. This illustrates how types of farming may change from time to time because of some change in demand conditions.

The increase in local population has caused more rapid changes in the production of bulky or perishable products than in those which normally are transported long distances to market. The production of whole milk and vegetables has increased, but there has been little change in the amounts of grain crops, pork, or beef, which are produced in amounts far in excess of local demand. On the other hand, there have been demands for food products which the nearby farmers could not profitably satisfy. The success of a farm, it must be emphasized, finally rests, not on the production of any one product but on the way in which certain combinations fit together in a well-rounded business unit which is adapted to the natural conditions and the resources of a particular farmer. Because of soil conditions, access to market, home labor supply, and other conditions, some farmers have been in a position to take advantage of increasing local demands for directly consumable farm products, while others could not profitably do so.

FARM EARNINGS

In the mixed livestock section of northwestern Illinois (Area 2) capital invested in farms has earned an average rate of 2.3, 5.3, 3.6, and 1.6 percent respectively during the four years 1924 to 1927. In the beef-cattle and hog-producing section of western Illinois (Area 3), the earnings were 4.3, 4.3, 2.3, and 1.5 percent respectively. Forty thousand dollars is the approximate average investment per farm in these areas, with bare land valued at about \$140 an acre as the average. These earnings were computed from records kept by farmers throughout the entire period, supplemented by survey records obtained from practically every farmer in an entire township in this part of the state in 1927.¹

Wide differences in farm earnings from year to year, such as the above, are to be expected because of changes in price levels and varia-

¹Careful comparisons made over the past four years in a different area each year show that the rate earned by account-keeping farmers is about 2 percent more on the total farm investment than the average of all farmers. In Wethersfield township in Henry county, for example, survey records from 117 farms showed the average earnings to be 2.2 percent in 1927, while 60 farms in the same county where careful records were kept earned 4.3 percent, a difference of 2.1 percent on the total farm investment.

tions in seasonal conditions. Of more significance is the fact that some farmers in a community consistently make larger profits than others. Studies of the earnings of individual farms, made by the University of Illinois during the past fifteen years, show that such differences are largely due to differences in the way the farms are organized and operated.

EARNINGS ON SELECTED FARMS

For the farming of an area to be most profitable, not only must it meet local food needs to the best advantage, but in the management of the individual farms certain principles must be observed that make for efficient organization and operation.

That some farmers in Rock Island county are more successful than others in putting the principles of good farm management into practice is indicated by a study of the records kept by 44 typical farmers in the area (Table 4). These 44 farmers, in 1927, earned an average

TABLE 4.—EARNINGS ON 44 FARMS IN THE AREA, 1927

	Average of 44 farms	15 <i>most</i> profitable farms	15 <i>least</i> profitable farms
Rate earned.....	5.1%	7.9%	1.9%
Labor and management wage.....	\$748	\$2 389	-\$657
Average size of farm, acres.....	223.2	252.6	192.7
Gross receipts per acre.....	\$ 25.58	\$ 31.94	\$ 19.84
Total expense per acre.....	9.70	9.90	10.50
Net receipts per acre.....	15.88	22.04	9.34

of 5 percent on their capital investment and \$748 as a return for their labor. The 15 operators earning the largest return averaged \$2,389 for their labor, while the 15 showing the lowest returns lacked \$657 of paying operating expenses and interest charges and received nothing for their labor. This is a net difference of \$3,046 per farm in the earning power of the two groups of farms.

Since the farms are operated under similar conditions, the above difference may be attributed in a large degree to the extent to which the operator has put into practice the principles of good farm management. The group of most profitable farms averaged 10.4 bushels more corn per acre, 6.5 bushels more oats, and $\frac{1}{10}$ ton more hay than the least profitable group (Table 5). The 15 more profitable farms had a larger proportion of their crop land in the higher-profit crops—corn, wheat, clover, and alfalfa—73.4 percent of the crop land being in these four crops as compared with 67.8 percent on the 15 least profitable farms (computed from Table 6). That corn, wheat, clover, and alfalfa are the more profitable crops is shown by cost records kept on farms in Knox and Warren counties for three years, 1923-1925 (Table 7).

Livestock was the most important source of income on all these 44 farms and accounted for 89 percent of their income in 1927 (Ap-

TABLE 5.—CROP YIELDS PER ACRE ON 44 FARMS IN THE AREA, 1927

	Average of 44 farms	15 <i>most</i> profitable farms	15 <i>least</i> profitable farms
	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>
Corn.....	46.0	52.1	41.7
Oats.....	44.6	48.4	41.9
Wheat.....	22.1	21.3	22.3
Barley.....	37.7	39.0	38.9
Hay (tons).....	(1.6)	(1.7)	(1.6)

pendix, Table 32). The success with which livestock was managed was therefore a large factor in determining the farm income; in fact, the greatest difference between these two groups of farms was the efficiency with which the livestock was handled. The average investment in productive livestock was very nearly the same on the 15 most profitable farms (\$21.60 per acre) and on the 15 least profitable farms (\$22.80 per acre). The more profitable farms showed more beef-cattle feeding and fewer hogs than the less profitable farms. The first group had a considerable income—about 19.7 percent of the total—from feed and grain, the larger acreage of small grain crops and the higher yields of feed crops resulting in this source of cash income. The 15 most profitable farms, however, received an average of \$120 return for each \$100 invested in productive livestock, while the 15 least profitable farms received an average of only \$85 (Table 8). Had the lower group secured the same rate of return on their investment in livestock as the upper group, their average farm income would have been nearly \$1,500 higher than it was.

A larger volume of business was handled on the 15 most profitable farms: the farm area was larger and more business was done per acre (Table 4). On the 15 most profitable farms the income was \$31.94 an acre, while on the 15 least profitable farms it was only \$19.84 an acre. Not only were receipts 60 percent higher, but expenses per acre were slightly lower on the 15 most profitable farms.

TABLE 6.—CROP ACREAGES ON 44 FARMS IN THE AREA, 1927

	Average of 44 farms	15 <i>most</i> profitable farms	15 <i>least</i> profitable farms
Size of farm.....	223.2	252.6	192.7
Area in:			
Corn.....	80.7	92.2	66.1
Oats.....	28.6	23.5	29.2
Wheat.....	10.2	16.7	6.1
Barley.....	8.4	16.4	1.7
Timothy.....	3.6	1.9	1.7
Clover.....	11.8	13.8	7.0
Alfalfa.....	5.6	6.9	6.9
Other crops.....	5.4	5.1	8.3
Total crop area.....	154.3	176.5	127.0

TABLE 7.—COMPARATIVE PROFIT YIELDED ANNUALLY BY VARIOUS FIELD CROPS,
BASED ON RECORDS OF FIFTEEN TO EIGHTEEN FARMS IN KNOX AND
WARREN COUNTIES, ILLINOIS, 1923-1925¹

	Corn	Oats	Winter wheat	Barley ²	Spring wheat ²
Yield per acre, bushels.....	51.3	54.1	21.8	27.4	14.2
Man labor used per acre, hours.....	14.77	8.47	11.58	9.83	6.15
Net profit or loss per acre.....	\$6.70	-\$1.46	-\$1.17	-\$4.15	-\$7.81
Net cost per bushel.....	\$.54	\$.38	\$1.11	\$.77	\$1.45
	Timothy	Mixed hay	Clover	Alfalfa	
Yield per acre, bushels.....	.94	1.04	1.67	2.79	
Man labor used per acre, hours.....	5.60	7.63	8.71	16.69	
Net profit or loss per acre.....	-\$1.39	-\$3.30	\$ 1.92	\$16.64	
Net cost per ton	\$14.60	\$16.86	\$11.86	\$10.22	

¹Twelve of the same farms kept records each of the three years.

²The data on barley and spring wheat were limited to a few farms, but are representative, except that the yields are a little low as compared with corn and oats.

The 15 most profitable farms made better use of both man and horse labor than the 15 least profitable farms (Table 9). Both groups had the same number of tractors in use.

Studies of farms in Jo Daviess, Carroll, and Whiteside counties in the northwestern part of Illinois in 1927, and in Mercer and Henry counties in the same part of the state, show a similar difference between higher and lower profit farms.

Thus the importance of better yields of crops, of cropping systems that include more of the higher profit crops, of more efficient livestock production, better use of man labor, more economical use of horses and mechanical power, and a better control of the costs of buildings and other equipment as factors in profitable farming are emphasized by actual farm records in this area. *The more successful*

TABLE 8.—RETURNS PER \$100 INVESTED IN LIVESTOCK ON
44 FARMS IN THE AREA, 1927

	Average of 44 farms	15 most profitable farms	15 least profitable farms
Returns per \$100 invested in productive livestock..	\$102.40	\$119.75	\$84.80
Returns per \$100 invested in cattle.....	93.50	96.30	70.00
Returns per \$100 invested in hogs.....	138.60	153.90	130.50
Returns per \$100 invested in poultry.....	181.10	214.50	157.00

TABLE 9.—EFFICIENCY IN USE OF MAN AND HORSE LABOR ON
44 FARMS IN THE AREA, 1927

	Average of 44 farms	15 most profitable farms	15 least profitable farms
Number of men.....	2.1	2.4	1.8
Number of work horses.....	6.7	7.1	5.9
Number of farms with tractors.....	24	7	7
Crop acres per man.....	73.5	73.5	70.5
Crop acres per horse.....	23.0	24.9	21.5

farmers in this area, as in other areas of the state, have as a rule spent from five years to a generation of intelligent effort in improving the soil, selecting good varieties of crops, establishing a good cropping system, developing efficient herds of livestock, and in equipping their farms for economical operation in accordance with carefully thought-out plans.

While one year's results are valuable in analyzing the factors that influence farm earnings, the importance of certain factors is brought

TABLE 10.—EFFECT OF VARIOUS PRODUCTION FACTORS ON FARM INCOMES: FROM A STUDY OF 175 CENTRAL ILLINOIS FARMS, 1925-1927

(The figures indicate the yearly differences between the 35 highest and the 35 lowest earning farms in the group)

Factor	Difference in earnings
1. Yield of crops.....	\$831
2. Amount of livestock kept.....	657
3. Efficiency of livestock in using feed.....	557
4. Kinds of crops grown.....	304
5. Difference in price received for grain.....	280
6. Cost of power and machinery.....	216
7. Cost of man labor.....	49
8. Other recorded expense.....	28
Other factors.....	118
Total yearly difference due to above factors.....	\$3 040

out more strongly in continuous studies of groups of farms. A recent study of 175 farms located in central Illinois, on which records were obtained each year for a three-year period (1925-1927), affords a good example of what such an analysis will disclose. The 35 most profitable of the 175 farms earned annually an average of \$3,040 more than the 35 least profitable farms. All the farms were comparable from the standpoint of soil, and the differences in earnings proved to be due to the ways in which the farms were organized and operated. Analysis showed that differences in crop yields, the kinds of crops grown, the amount of livestock kept, and the efficiency with which the livestock was handled, skill in marketing the products of the farm, and the amount of expense incurred accounted for more than 95 percent of the differences in earnings between the two groups (Table 10). As studies such as this are continued over a longer period they show that some farmers are making progress toward placing their farms on a more profitable basis. Others, while still in the lower profit group, have made changes in organization based on an analysis of their business that should materially increase their earnings in the next few years.¹

ORGANIZATION AND OPERATION OF TYPICAL FARMS

Many of the farms in Rock Island and Henry counties may appear to be following much the same type of farming, yet in reality quite

¹A more comprehensive discussion of the principles that underlie successful farming under Illinois conditions will be embodied in a forthcoming bulletin of this Station.

TABLE 11.—FACTS CONCERNING THE ORGANIZATION AND PRODUCTION OF THREE SUCCESSFUL FARMS IN THE AREA: BASED ON RECORDS FOR THE THREE YEARS 1925-1927¹
(The figures indicate yearly averages)

	Beef-cattle feeding and hog farm	Dairy and hog farm	Beef-cattle raising and hog farm
Rate earned.....	8.3%	8.9%	6.0%
Total investment per acre.....	\$238	\$213	\$311
Size of farm in acres.....	380.0	153.3	165.0
Percentage of crop land in higher profit crops.....	63.8	65.3	64.3
Percentage of income from livestock.....	99.1	88.0	93.8
Number of cows.....	6	15.5	15
Number of brood sows.....	30	16	35
Number of steers fed.....	115	.....	25
Return per \$100 invested in productive livestock...	\$130	\$162	\$193
Yield of corn per acre.....	57.7	46.4	58.4
Yield of oats per acre.....	60.6	55.2	43.9
Gross receipts per acre.....	\$38.48	\$32.78	\$33.85
Total expense per acre.....	\$18.61	\$13.72	\$15.04
Net income per acre.....	\$19.87	\$19.06	\$18.81

¹For more detailed statement see Table 36 in the Appendix.

wide differences are to be noted. That there is opportunity for successfully following different systems is indicated in a study of some of the better farms. Financial records for three years on three farms in this area following different types of farming show each to be relatively successful as compared with the average of all farms keeping records (Table 11). One of these three successful farms is a typical beef-cattle and hog-feeding farm. It is a large farm capable of producing a large amount of feed all of which is fed to cattle and hogs. Three men were employed on it. The second is a dairy and hog farm from which butter is sold to local retailers. This is a smaller farm with a considerable acreage of tillable land in pasture; in fact, practically the entire farm is tillable. While smaller than the first and showing smaller receipts per acre, the expenses per acre were considerably lower, making the net income per acre larger. The third is a beef-cattle and hog farm, maintaining a beef-cattle herd for the raising of feeding calves. Beef cows were so handled as to make good use of legume pasture and to aid in improving crop yields. Hogs were an important source of income on this farm as they were on the others.

All three farms followed very closely the basic principles of good farm management—high crop yields were obtained, large acreages were planted to the more profitable crops; livestock was handled efficiently and was the main source of income; a large volume of business was done; and labor, power, and machinery were used efficiently. Close observance of these principles, it is clear, was of more importance in determining the income of these farms than was the particular type of farming followed, tho it should be added that all three farms engaged in types well adapted to local conditions.

HOME EQUIPMENT ON FARMS

One index of the standard of living in a rural community is the extent to which farm families possess and use modern mechanical equipment. Among farmers of different circumstances, as measured by tenure, size of farm, and term of occupancy, the availability of such equipment naturally differs, and a study of equipment as related to those conditions is therefore of particular interest. Of the 412 families from which facts concerning home equipment were obtained, 379 gave information about tenure, which it is worth while to examine before discussing equipment. (For detailed data supporting the following discussion, see Appendix, Tables 37, 38, and 39).

Among the 379 farms, 184 were operated by owners, and of these farms those of larger size (200 acres and over) had been in the hands of the same operators longer than had the smaller farms. Tenant farmers (195 records) had farmed almost as long as owner-farmers—14 years as compared with 18 years—and in 1928 had been on the farms they were then operating 7 years as compared with 11 years in the case of owner-operators. Owners operating larger farms had farmed for a longer total time than owners operating small farms. In the case of tenant operators this latter distinction was much less marked.

Houses on farms of owners were but slightly larger than those on farms operated by tenants. This held true on farms of the various sizes. Owner houses averaged 8.3 rooms and tenant houses 7.5 rooms.

Trucks were a part of the equipment of 36 percent of the owners and 2 percent of the tenants. The proportion of owners not having automobiles was 3 percent and of tenants 5 percent.

In the matter of lighting, 76 percent of the tenants and 54 percent of the owners depended on kerosene or gasoline; 17 percent of the tenants and 23 percent of the owners used electricity from power lines; 4 percent of tenants and 20 percent of owners had home electric plants.

Running water at the sink was enjoyed by 17 percent of the tenant and 36 percent of the owner families. Bathrooms with running water were in 9 percent of the tenant and 31 percent of the owner homes. Sixty-three percent of the tenants had stoves and 37 percent furnaces, while 40 percent of the owners had stoves and 60 percent furnaces. Laundry facilities included machines run by power in the case of 52 percent of the tenant families and 68 percent of the owner families. Refrigerators were reported by 22 percent of the tenants and 46 percent of the owners.

Fifty-six percent of the tenant homes and 62 percent of the owner homes had either hand or electric vacuum cleaners. Electric irons were reported for 19 percent of the tenant families and 45 percent of the owner families. Families on larger farms had more use of electric power from power lines, but with respect to much of the other equip-

TABLE 12.—PROPORTION OF OWNERS AND TENANTS POSSESSING DIFFERENT TYPES OF HOME EQUIPMENT: 379 FARMS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, SEPTEMBER, 1928¹

	184 owners	195 tenants
	percent	percent
<i>Fixed equipment</i>		
Home electric plant or power-line connections.....	43	21
Bathroom plumbing or running water.....	31	9
Toilet in bathroom.....	26	8
Furnace.....	60	37
<i>Movable equipment</i>		
Kerosene or gasoline stove.....	79	74
Power washing machine.....	68	52
Sewing machine.....	98	90

¹For more detailed records see Table 39 in the Appendix.

ment there was relatively little difference between the larger farms and the medium-sized and small farms.

Both tenant and owner families have had less access to fixed equipment than to movable (Table 12). In the homes of tenant farmers equipment of the fixed type has had relatively little place.

In the case of 57 farmers it is possible to examine the relation between length of time on the farm operated in 1928 and the extent of home equipment (Table 13). Farmers who had been on the same farms for 15 years or more had electricity in 50 percent of the cases, furnaces in 67 percent, toilet in bathroom in 60 percent, and running water in bathroom in 75 percent. These figures are in each case markedly larger than for farmers who had been on the same farms from 10 to 15 years, from 5 to 10 years, or for less than 5 years.

Access to these modern improvements in the home is clearly related to the permanence of the families and to their tenure as owners of the farms operated by them.

TABLE 13.—YEARS ON PRESENT FARM AND EXTENT OF HOME EQUIPMENT: 57 FARMS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, SEPTEMBER, 1928

Years on present farm	Number	Percentage having—			
		Electricity	Running water in bathroom	Toilet in bathroom	Furnace
0 to 4.9.....	25	4.0	4.8	None	24.0
5 to 9.9.....	15	13.3	6.7	None	26.7
10 to 14.9.....	11	30.3	45.4	18.2	54.5
15 and over.....	6	50.0	75.0	60.0	66.7

THE LOCAL SITUATION AS TO PRODUCTION AND CONSUMPTION OF FARM COMMODITIES

The situation relative to farm products in the area is considered under seven leading classes of products—field crops, meat animals, dairy products, poultry and eggs, fruits, potatoes and other vegetables. A considerable part of the first two groups of products—field crops and meat animals—is shipped to outside markets. The other groups of commodities are produced in amounts smaller than needed for local consumption, and altho some of them are shipped out of the area, the greater part of them reach the consumers quite directly.

In order to learn the prevalent views of dealers and consumers toward locally grown produce, representatives of both groups were queried on a number of points with the results here given.

Records were obtained from 67 dealers located within the city limits of Rock Island, Moline, East Moline and Silvis, all of them handling some local farm produce. The group included 34 ordinary grocery stores, 26 meat and grocery stores, 4 grocery departments of large department stores, two meat markets and one fruit and vegetable department of a meat market.¹

Ninety-four percent of the storekeepers, according to these records, stated that their customers were well satisfied with the present grade and quality of farm products. Lack of variety and poor quality drew some complaint.

Over two-thirds, 69 percent, of the dealers reported that their customers expressed preference for local produce, 12 percent reported that their customers objected to local produce, and 19 percent reported that their customers really do not know the difference between local and outside produce. It seemed to be a rather prevalent opinion among storekeepers that customers are not concerned with the origin of the produce; they merely choose a reliable dealer and leave it to his judgment to decide about quality, flavor, and other such considerations.

When the dealers were asked if they themselves had objections to using local farm produce, only 22 percent reported that they had. Of the small number reporting objections, half based them upon unavailability of the produce and lack of a dependable supply. The others objected to the lack of grading and the poor quality of local produce.

Nearly four-fifths, 78 percent, of the dealers expressed personal preferences favorable to local products, the main reason given being that farmers usually take a large part of their pay in the form of groceries. Farmer trade is a much coveted sideline for a city grocer.

¹Chain stores were not included because of a rule prohibiting local managers from giving out information concerning the business.

In many cases dealers are competing with one another for the farmer patronage, paying more than market price for local products when a portion is taken out in trade. Other reasons why dealers preferred local produce included better quality and small spoilage.

To obtain the views of consumers, the investigators visited 458 households and 18 public eating houses in the four cities on the Illinois side of the Mississippi river, and procured first-hand information concerning the consumption of and the attitude toward locally produced food products. The significant facts brought out in this phase of the study are discussed in the individual sections that follow.

FIELD CROPS

Present Production. In this area, where livestock and livestock products make up a large part of the receipts of most farms, practically all crops, excepting wheat, have been raised with a view to meeting local feed requirements. Economy in operating the farm and the care of the soil have also influenced the selection of crops.

The average yield of corn in Rock Island and Henry counties was 33 and 30 bushels an acre respectively in 1927. Compared with these yields, farm account keepers in the trade area grew an average of 46 bushels and the best one-third of them an average of 52 bushels an acre. Such differences in yield are due directly to the following of better practices on the high-yielding farms.

As noted previously, corn, wheat, barley, alfalfa, and sweet clover have been the higher profit crops in this part of Illinois. While about half the crop land in Rock Island county was used for corn in 1924, only about 10 percent was devoted to the other higher profit crops, and the situation is not greatly changed at present. Red clover is grown to some extent. The crop is better adapted to some land than is alfalfa, but the acreage is small.

Many farmers in these counties are following good rotations of crops, but there is much room for improvement. In 1924 it was reported that 3.1 percent of all crop land in Rock Island county was in clovers, 2.1 percent in alfalfa, and 9.8 percent in mixed hay, of which less than half presumably was in legumes. This suggests that less than 10 percent of the land was in legume crops in 1924 and the proportion at the present time is probably not essentially different. Under good farm practice, however, from 20 to 25 percent of the land should be in legume crops.

Opportunities for More Profitable Production. In the production of field crops it is necessary, on the one hand, that careful attention be given to the soil, cultural practices, and the selection and preservation of seed from high-yielding varieties. It is no less important that careful attention be given to the selection and combination of

crops to bring the largest net return; and in this connection it may be remarked that the profitability of a feed crop depends in large measure upon the demand by local farms as well as upon the demand at the central markets.

In this area, as in others, successful farms have a large part of the land planted to the higher profit crops. Even in normal years, however, farm purchases in this section have included considerable commercial feed, at least a part of which could have been advantageously avoided by growing suitable feed crops.

The wide differences in crop yields and in the acreages of different crops grown indicate the need for improved practices, both in growing the crops and in apportioning land to them. The needs along these lines have been so apparent and apply to so many farms that the farm bureaus in both Rock Island and Henry counties have given prominence to soil and crop improvement work. Among the projects selected by the local farm bureaus from among those offered by the Agricultural Extension Service of the University of Illinois, are the following:¹

“More and Better Legumes.” This project has as its object “to demonstrate the adaptation and use of the more important legumes; to encourage the greater utilization of legumes on all farms in the various sections of the state; and to demonstrate the place of the new and uncommon legumes.” The project gives special attention to sweet clover, alfalfa, red clover, and soybeans.

“Better Seed Corn,” the object of which is stated as follows: “to demonstrate that the yield of corn may be increased by the selection of good seed; that diseases appear in every cornfield in the state and can be detected; that it is possible to select, in practically every field, ears of corn which are relatively free from disease; that seed corn can be successfully culled during the late winter and early spring; and that the germination test is essential as the final step in securing disease-free seed corn.”

“Soil Testing and Mapping,” a project planned “to carefully test the soil . . . for acidity or limestone requirement, and to preserve a record of the tests in the form of a map which will be useful in connection with liming practices and studies of soil conditions within the county.”

“Limestone, Phosphate, and Potash Demonstrations” the object of which is “to demonstrate the value of limestone and potash, when used separately and in combination, on the various soil types of the state in connection with suitable crop rotations.”

¹In the following discussion quotation marks are used to set out the names of the projects of the Agricultural Extension Service of the University of Illinois in cooperation with the county farm bureaus, and further quotations stating the objects have been taken directly from official statements of the projects.

While thru these and other projects extensive work has been done toward meeting many of the problems arising in the successful production of the staple field crops of the area, and marked progress has been made, it is the constant problem of the local farm bureaus to get a larger proportion of farmers to adopt better practices. Financial conditions, however, as well as lack of information, have retarded soil improvement on many farms. A period of years is frequently required to get the full benefit of money expended for limestone and rock phosphate, and one or more rotations of crops are required to bring low-producing land into a reasonably high state of production. While the returns on money expended for intelligent soil improvement are large, it is difficult in a period of depressed agriculture for many men to make the investment. After a century of farming, however, better care of the soil is essential. This applies to the better land as well as to poor land. In fact the income per acre can frequently be increased more for a given expenditure on good land that has been continually in grain crops, with practically no fertilizer applied, than on naturally poor land.

To bring about better care of the soil a long-time view is as important for others as for the farmer. Encouragement such as a banker can give is needed by many farmers to induce them to incur the expense needed in soil improvement. Many tenant farmers, including those related to the owners of the land, are ready to do their part in applying fertilizers and entering upon a constructive soil-building program if the landowners make it financially possible. Expenditures of this nature must be viewed in the same way as those for new buildings and for other long-time improvements except that soil improvement brings a more direct advantage in increasing the farm income than do many other improvements.

MEAT ANIMALS

Present Production. Receipts from swine on 110 typical farms in the area were 43 percent of all receipts from sale of products,¹ and receipts from beef cattle were 32 percent. Thus hogs were the largest single source of income. Only five of these farms reported the sale of meat and lard, the total value being only \$91.

Hogs.—Of the 88 farms which sold hogs, all but 14 sold for destinations outside the area. The proportion of the swine sold to outside points was 94 percent, measured in terms of either weight or value. In the case of 43 percent of the swine sold for outside destinations, shipment was made directly to commission firms by the individual producers, while 53 percent was handled thru local cooperative shipping associations.

¹See Table 3, page 144.

For the 88 farms reporting sales of hogs, the average amount sold was 15,096 pounds.

Records of 29 producers for the year ended August 31, 1928, show that the monthly proportion of swine sales was highest in February, 18 percent; March, 16 percent; January, 13 percent; and July, 12 percent; and was smallest in September, 3 percent; October, 3 percent; June, 4 percent; and August, 5 percent.

Beef Cattle and Veal Calves.—While 53 of the 110 farms reported no receipts from the sale of beef cattle during the year ended August 31, 1928, all but 17 of the 57 farms reporting such receipts sold for destinations outside of the area. Nearly 94 percent of the beef cattle receipts were from sales to these outside points. As in the case of hogs, the amount going directly to city customers was negligible. Less than 4 percent of the beef cattle sold were sold directly to packers, 13 percent went to shipping associations, while over 83 percent were handled directly by commission firms. The proportion of beef cattle sold thru associations by these farmers was less than one-fourth as large as in the case of total shipments from 15 stations in the area (Table 21, page 182).

From the records of 28 producers in the area it appears that the largest proportions of the beef cattle were sold in January, 21 percent; June, 16 percent; July, 14 percent; and February, nearly 14 percent. The months of smallest sales were: November, practically none; December, 1 percent; October, 2 percent; and May, 3 percent.

Veal calves were produced for sale on 65, or nearly 60 percent, of the 110 farms. The veal-calf sales during the year ended August 31, 1928, averaged 340 pounds, counting all the farms, or nearly 580 pounds, counting only the 65 farms actually making such sales.

The marketing of veal calves was about evenly divided between local and outside points. The local shipping associations handled over 60 percent of the veal calves destined for outside markets, the balance being sold directly thru commission firms.

Sheep.—That only a small place has been accorded sheep in the production of this area is indicated by the fact that on 44 farms the sales during the year ended August 31, 1928, averaged \$107. The sheep inventory was estimated at \$41 and the net increase, considering purchases, sales, and inventory changes, was set at \$38. Some-what higher figures were shown for the 15 most profitable farms.

Opportunities for Livestock Improvement. Extension projects on swine carried on in this area by the University of Illinois and the local farm bureaus include the "McLean County System of Swine Sanitation," "Balancing Corn for Hogs," and "Ton Litters." The "McLean County System of Swine Sanitation" has for its object the raising of pigs "free from infestation with worms and free from necrotic infection." It involves the use of clean farrowing quarters, the dis-

infecting of brood sows, and the use of clean pastures. The project, "Balancing Corn for Hogs," has been conducted "to demonstrate the profitable use of home-grown and by-product protein feeds in balancing corn for swine." Under this project the cooperators use the swine sanitation system and feed their hogs such combinations of other feeds with corn as will result in maximum profit. The "Ton Litter" project was instituted "to produce litters of pigs weighing as much as 2,000 pounds at six months of age, and to focus attention upon the importance of large litters."

4-H Club Work.—One of the best opportunities for the future development of agriculture is offered by the work with farm boys and girls in the 4-H Clubs. The projects carried on by these clubs deal with most lines of farm production and with home development. The organization and direction of the clubs is a part of the extension program of the State Agricultural College and the federal government under the federal Smith-Lever Act. The character of the farm projects is well illustrated by some of the livestock projects, such as the "Baby Beef Club" and the "Half-Ton Calf Club." The purpose of the Baby Beef Club is "to popularize baby beef production and demonstrate the best methods of raising and finishing beef calves." The project includes meetings, farm tours, and exhibits of the calves fed by the boys and girls. The Half-Ton Calf Club is somewhat similar in character, the object being "to grow calves to a weight of 1,000 pounds in 365 days."

Club work helps to retain the interest of farm boys and girls in farm affairs and at the same time teaches better practices.

DAIRY PRODUCTS

Production and Consumption. The number of cows milked in nearby counties is estimated per square mile of land in farms as follows: (in Illinois) Rock Island, 26; Henry, 19; Mercer, 14; and Whiteside, 27; (in Iowa) Cedar, 22; Clinton, 27; Muscatine, 22; and Scott, 36. Thus dairying is of about equal importance on both the Illinois and Iowa sides of the Mississippi. It is a larger source of income on farms in this part of Illinois than in the state as a whole. This is true around any large population center.

The average production for all cows in Rock Island and Henry counties was about 3,500 pounds per year according to the 1925 Agricultural Census. This low production is to be accounted for in part by the milking of cows which are largely of beef breeding where the production of calves for the feedlot is a more important part of the cattle enterprise. Considerable cream production comes from herds of this type. If such herds were excluded from the average, there is little reason to suppose that the average production of the more strict-

ly dairy herds of this area would fall below the average of the state, which is about 4,500 pounds per cow annually.

The daily consumption of whole milk in the homes of this area was slightly less than three-fourths of a pint per capita.¹ The annual consumption of milk in the area was over 26,000,000 pounds for a population of just over 100,000,² or the product of nearly 6,000 cows of an average production of 4,500 pounds annually. In addition, the consumption of butter, cheese, cream, and evaporated milk provides a demand for the product of over 18,000 more cows. Expressed in another way, to meet the local demand thru local production would require more than 1.5 times the number of cows now found on the farms of the area, assuming the present production per cow.

If all of the dairy products used had been produced within the area, it would have required a greatly increased production to meet the demand. Butter, cheese and evaporated milk, however, are concentrated products which may be shipped considerable distances to advantage. Twice as much cream was shipped out of the area as was brought into it. On the other hand, a considerable part of the milk used in the area was shipped in from Iowa. If the fluid milk now consumed in the area was to be produced in the area, and the local production of dairy products maintained at its present level, 1,800 more cows of the above production would be needed. Much of this increase could be secured by obtaining higher production per cow thru better selection, feeding, and management. Any increase in the consumption of locally produced milk, however, must depend upon the displacement of milk sent in from outside of the area, increased consumption per capita, or increased population.

All the whole milk sold from farms in the trade area was sold either locally or on the Iowa side of the river. The 428 families from which records were obtained bought 9 percent of their milk from farmers' wagons, 66 percent from milk companies, and 25 percent from local stores. Information obtained from the local retail milk dealers' association shows that 75 percent of their sales are retail. Since the sales of wholesale milk include that sold to bakeries, pastry shops, candy manufacturers, and other shops as well as to grocers, it is apparent that grocers handle less than 25 percent of the milk sold. The average grocery sold about 34 quarts of milk daily.

All but 30 families in the group of 458 interviewed used fresh milk, with an average daily consumption of 2.76 pints per family. Of this supply 73 percent was Grade B milk, 25 percent Grade C, and 2 percent Grade A (Table 14). This checks quite closely with the in-

¹This does not include the consumption of ice cream, which usually amounts to a little less than 2 pints per capita monthly.

²This is the approximate population of Rock Island, Moline, East Moline, and Silvis.

formation obtained from the retail milk dealers, who reported that 81 percent of the milk sold was pasteurized, and that the remaining 19 percent was divided between C and A grades. Twenty-one percent of the stores sold both A and C grades, while 93 percent sold B grade. (Grade B milk is pasteurized, while the milk of both Grade A and Grade C is sold as it comes from the farm).

TABLE 14.—CONSUMPTION OF MILK BY 428 FAMILIES IN EAST MOLINE, MOLINE, ROCK ISLAND, AND SILVIS, ILLINOIS, DURING YEAR ENDED AUGUST 31, 1928

Item	Milk supply by grades	Milk consumed daily per family			
		From the local store	From the milk wagon	From the farmers' wagon	From all sources
	per cent.	pints	pints	pints	pints
Grade A milk.....	2.1	.01	.05	...	.06
Grade B milk.....	72.5	.61	1.35	.04	2.00
Grade C milk.....	25.4	.06	.41	.23	.70
Total.....	100.0	.68	1.81	.27	2.76
Percent by sources.....	.....	(25)	(66)	(9)	(100)

Grade A milk sold up to 22 cents a quart, and was produced by Guernsey cows under the best of conditions. Grade B milk, which was used in largest amounts in the area, retailed at 11 to 13 cents a quart. Grade C milk, which was not as standardized a product as either the A or B grades, sold at 9 to 11 cents a quart. Thus the price received for milk ranged from 9 to 22 cents a quart depending upon the grade. The reason for Grade A milk selling for more than twice as much as Grade C is that Grade A has a high fat content, is from tested herds, and is handled under the most sanitary conditions, while Grade C milk carries little or no guarantee.

The consumption of milk in the area is below that found in some cities. It may be questioned whether enough attention is given to the grade of milk consumed.

The sale of butterfat per square mile in 1924 in Rock Island and Henry counties was 619 and 683 pounds respectively, which is above the average of the state. The selling of cream is well adapted to a diversified farming section such as this, since calves, hogs, and poultry provide a profitable way of utilizing the skim milk on the farm. Over 55 percent of the farms from which records were secured sold butterfat, compared with about 12 percent which sold fluid milk. The net price received for the sale of milk by farmers in the trade area was about \$2 for 100 pounds at the farm. Estimating that 100 pounds of skim milk is equal in value to one-half bushel of corn, the return for cream sold was about equivalent to the return on the sale of whole milk. Since the cost of delivering milk daily is greater than that of cream, which may be delivered at intervals of two or three

days, there is reason for many of the farmers to sell cream rather than milk, especially when a small number of cows are milked.

Improving the Dairy Situation. The analysis of the dairy situation in the area suggests various improvements which might be made. The low production per cow indicates an opportunity for emphasizing the improvement of dairy herds and the introduction of better practices. A study of 57 dairy herds in northern Illinois shows the influence of the production per cow on the cost of production, profits, and total farm earnings (Table 15).

Improvement of dairy herds in the area has been undertaken thru an extension project developed by the University of Illinois and the local farm bureaus and having to do with the organization of "Dairy Herd Improvement Associations." The object of these associations is "to enable dairymen to secure production records and feed records on each cow in their herds and to acquaint them with desirable practices of feeding, breeding, care, and management." A further development of this project to include more dairymen in the trade area might well be made for the betterment of dairy production.

Farmers who are not in position to take up the dairy herd improvement association work have the opportunity of attending "Dairy Schools" conducted by the extension agencies of the University of Illinois in cooperation with the local farm bureaus. At these schools, which are held for one day in a locality, discussion is centered on desirable practices to use in the feeding, breeding, and management of dairy cattle.

The "Purebred Sire Project" has for its object the improving of livestock "by encouraging the use of more purebred sires." Thru the exchange of good sires or their cooperative ownership, farmers with smaller herds may improve them at a lower cost than they could independently.

Tours and demonstrations held under the auspices of the farm bureau furnish further means for farmers to study the methods of feeding, breeding, care, and management of dairy cattle under practical farm conditions. The fact that 25 percent of all milk consumed in the area was of Grade C, with no guarantee, suggests that there would be opportunity to sell more milk of superior quality if the public were properly informed regarding the advantages of the better grade of milk and its food value in comparison with other foods. While an educational campaign is frequently necessary to increase the consumption of superior food products, better markets are often established by such methods. This might well be done for milk.

Milk is one food for which, after much research, a definite standard for optimum nutrition has been set. Prominent investigators recommend that each child thruout the period of growth have one quart daily and each adult one pint daily. It is stated by one authority that milk contains "the greatest assortment of nutritive substances of

TABLE 15.—MILK AND BUTTERFAT PRODUCTION IN RELATION TO COST, INCOME, AND PROFIT PER COW AND PER 100 POUNDS OF MILK:
57 DAIRY HERDS IN NORTHERN ILLINOIS, 1927

Milk production per cow (pounds)	Farms in group	Number of cows per farm	Average production			Cost, income, and profit per cow				Cost per 100 pounds milk	Rate earned on farm investment
			Milk	Butter fat	lbs.	Feed cost	Total cost	Total income	Net profit	Depreciation	Feed cost	Total cost
Over 10,000.....	6	21.2	11.114	394	\$117.78	\$213.63	\$279.95	\$66.32	\$9.43	\$1.91	9.53
9,000-10,000.....	10	16.5	9.468	329	102.17	191.27	248.39	57.12	16.63	1.08	2.02
8,000-9,000.....	12	20.0	8.454	296	97.10	180.86	217.80	36.94	16.25	1.15	2.14
7,000-8,000.....	13	21.4	7.503	264	90.43	166.49	192.11	11.37	11.37	1.21	2.22
Under 7,000.....	16	18.8	6.515	240	85.33	157.46	191.61	34.15	8.10	1.31	2.42
Average.....	57	19.5	8.155	288	95.61	177.03	213.51	36.48	12.91	1.17	2.17

all single food materials, and constitutes the foundation upon which an adequate diet can most safely and most easily be constructed."

With the value of milk in the diet so well recognized scientifically, there would seem to be a good basis for a campaign of education to stimulate its greater use. An extension project entitled "Food and Nutrition," developed by the University of Illinois and emphasizing the proper selection of food for health and nutrition, gives prominent place to milk, but this project reaches only a few urban families. Such a project, however, might well be the basis for a general educational campaign in city, as well as in country, for a greater use of milk, since an improved demand for any food product will become effective only in so far as the individual consumers demand the product.

POULTRY AND EGGS

Production and Farm Sales. Except during a part of the spring period, and also in September in the case of poultry, the area is dependent upon outside supplies of poultry and eggs. Poultry and egg production is distinctly a side line with farmers, as is shown by the fact that poultry receipts made up 2.6 percent and egg receipts 3.3 percent of total sales of the 110 farms from which detailed records were obtained.¹

Poultry was produced for sale on 72 of these farms and eggs on 75. Three of the farms sold their poultry outside the area, but the eggs in all instances were sold within the area. Direct sales to city consumers accounted for 4 percent of the poultry and 4 percent of the eggs. Sales to neighbors absorbed 2 percent of the poultry and less than 1 percent of the eggs. The rest of the poultry, 94 percent, was sold to local buyers, and over 95 percent of the eggs were sold to local stores, butcher shops, hucksters, buyers, etc.

Forty-nine percent of the poultry sales from these 110 farms took place during the fall and holiday seasons, in the months of October, November, and December, while 62 percent of the egg sales occurred during the four months of March, April, May, and June.

Poultry Consumption. The amount of poultry consumed in Moline and nearby cities in the course of a year can be judged from the information obtained from the 458 housewives interviewed.

These 458 families used an average of 55.2 pounds each a year, or slightly better than one fowl a month (4.6 pounds). Winter consumption averaged 5.6 pounds a month and summer consumption 3.6 pounds. Fryers made up 32 percent of the total poultry consumed, the remainder, 68 percent, being classified as roasting chickens. Less than half, 42 percent, of the poultry purchased was delivered alive, 2 percent was delivered killed but not drawn, 5 percent was delivered

¹See Table 3, page 144.

drawn after being purchased alive, and 51 percent was purchased drawn.

Nearly two-thirds, 64 percent, of the housewives interviewed preferred home-grown poultry to the shipped-in product. Of those expressing this preference, 9 percent gave no reason for it; 72 percent said that the home-grown poultry was fresher; 12 percent that it was healthier; 2 percent better fattened and 5 percent that it afforded better opportunity for selection.

Sixty-two percent of the poultry used by the housewives was furnished by local stores; 29 percent was purchased directly from farmers; and 9 percent was furnished by home flocks. Of those who purchased from local stores, 93 percent reported the service to be satisfactory and all of those who purchased from farmers were satisfied.

Hotels and restaurants reported the use of 1,601 pounds of poultry a week.¹ Of this amount 21 percent was purchased directly from farmers.

Records from 67 retail dealers² handling farm produce indicate that nearly half, 46 percent, of those interviewed were handling poultry.

Demand for Eggs. The number of eggs consumed by the 458 families interviewed averaged two dozen a week for a family. The fact that consumption is slightly larger in the summer than in the winter is probably largely explained by the lower price prevailing during the summer.

Sixty-five percent of the eggs were purchased from local stores, and 30 percent from farmers. Five percent came from flocks owned by the city consumers. The average purchase was 1.7 dozen, or slightly less than a week's supply.

The consumers interviewed showed no tendency to agree upon preference for any particular color or grade of eggs. White eggs were preferred by 32 percent, brown eggs by 27 percent, and 41 percent had no preference or usually bought mixed eggs.

It is interesting to note the difference between the housewives' description of the eggs they used and the kind of eggs they actually ordered. The terms they employed in describing the eggs were: strictly fresh, 23 percent; storage, less than 1 percent; best, 8 percent; cheapest, 1 percent; small eggs, less than 1 percent; large eggs, 3 percent; culls, 1 percent; country eggs, 2 percent; just "eggs," 62 percent. The descriptions used in ordering were: strictly fresh eggs, 62 percent; country eggs, 7 percent; large eggs, 1 percent; just "eggs,"

¹In Rock Island, Moline, East Moline, and Silvis the restaurant trade accounts for only a very small part of the total consumption of food products. It is estimated that not more than 5,000 meals are served daily in public eating houses in all four cities.

²There were 34 ordinary grocery stores, 26 meat and grocery stores, 4 grocery departments of large department stores, 2 meat markets, and 1 fruit and vegetable department of a meat market. (See page 157.)

23 percent; other descriptions, 7 percent. Many housewives who reported ordering "strictly fresh eggs" also reported that the eggs received were sometimes not so good as those received at other times, indicating that eggs were not being sold in accordance with careful grading, or that storage eggs were being sold as fresh eggs.

Only 54 percent of the consumers interviewed knew whether the eggs which they were using were produced locally or were shipped in. Of those who reported that they knew they were getting local eggs, two-thirds indicated that they could tell this because the local grocer had so informed them, and one-fourth actually knew or thought they knew the farmers from whom the grocers procured the eggs. Only one housewife in sixteen had been buying eggs of any particular brand in cartons.

Records from 18 hotels and restaurants serving 3,005 meals a day indicated an average use of 901 dozens of eggs a week. Nearly 42 percent of these eggs had been purchased from farmers.

Records from 67 retail dealers show that 94 percent handled eggs. Egg consumption was reported uniform thruout the year by 26 percent of the retail dealers, heaviest in spring by 48 percent, heaviest in summer by 20 percent and heaviest in winter by 6 percent.

Records of 27 retail dealers indicated an average annual purchase of 358 cases¹ of eggs; 162 cases, or 45 percent being procured from farmers, and 196 cases from local wholesale dealers. The average size of purchase by these retail dealers from farmers was 1.9 cases and from local wholesale dealers, 1.4 cases. Of the eggs purchased from local dealers, 77 percent were graded as select, but only 8 percent of those purchased from farmers were so graded. Thus 92 percent of the eggs bought from farmers were of no stated grade. One-third of the retail dealers reported that they graded eggs purchased of farmers before reselling them.

The areas from which eggs handled by dealers were obtained were reported to be as follows: local, 65 percent; Iowa, 30 percent; area unknown, 5 percent.

Improving Poultry Production. Poultry is one of the products reported by dealers to be subject to fluctuating demand resulting from employment conditions. Nearly seven-eighths, or 86 percent, of the dealers reported the poultry supply to be adequate. Twenty-nine percent of the retailers reported that the consumption of poultry could be increased if a better supply were available. Few of the retail dealers had any suggestions for improving poultry marketing. The extent to which individual farmers can profitably increase their poultry production depends upon their success as economical producers.

Two of the more important extension projects for poultry improvement which have been developed by the University of Illinois and

¹A case contains 30 dozen.

promoted by the local farm bureaus are "Poultry Sanitation" and "Poultry Flock Management." The object of the poultry sanitation project is to demonstrate how "to raise chickens free from infestation with parasites and free from disease; and to keep them free as mature flocks." The object of the poultry flock management project is "to encourage better management methods for farm poultry flocks; to encourage the keeping of records as a basis for studying the efficiency of farm flock production and to develop leaders who will follow improved poultry practices, as far as practicable, in order that their flocks may serve as demonstrations of profitable poultry management in their respective communities."

Larger Egg Production Justified. Three-fourths of the dealers reported the egg supply inadequate. Most of the consumers were unable to name any standard grade of eggs. Eggs were not being graded by the producers. Nevertheless, 80 percent of the housewives interviewed, who purchased from stores, and 95 percent of those who purchased from farmers were satisfied with the product. This can be explained, however, by the fact that they have not been accustomed to purchasing eggs by grade.

An outlet for quality eggs at premium prices in the cities of this area would thus seem to be open to some farmers of the area. While 63 percent of the housewives stated that they were paying enough for

TABLE 16.—PREMIUMS WHICH 458 HOUSEWIVES IN THE AREA REPORTED WILLING TO PAY FOR HIGH QUALITY EGGS, 1928

Amount of premium per dozen eggs	Number and proportion who would pay premium	
	Number	Percentage
9 cents or more.....	50	10.9
6 but less than 9 cents.....	17	3.7
5 cents.....	71	15.5
3 and 4 cents.....	17	3.7
2 cents.....	13	2.8
1 cent.....	1	.2
No premium.....	289	63.2
Total.....	458	100.0

their eggs, a considerable proportion expressed a willingness to pay a substantial premium for eggs of high uniform quality. A summary of the replies to the question as to what amount of premium might be paid is shown in Table 16.

Inasmuch as 30 percent of the housewives expressed willingness to pay premiums of 5 cents a dozen or more, it appears that there is opportunity for some producers to build up a trade for good eggs that are fresh, uniform in size and color, and that could be delivered to the customers every week in the year. While the production of premium eggs may add to the cost of putting them on the market it should be profitable for some farmers to develop their business along these lines.

With greater certainty as to grade of eggs purchased, it is likely that consumption of eggs would increase. In many families eggs should fill a more important place in the diet than they do now. They

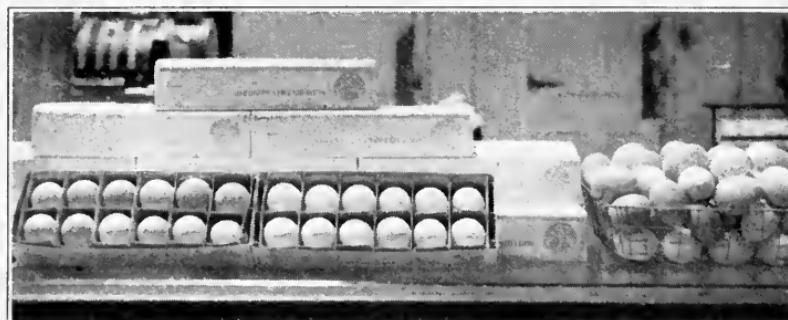


FIG. 5.—FRESH EGGS CAREFULLY GRADED AS TO SIZE AND COLOR
USUALLY COMMAND BETTER PRICES

Such eggs properly displayed attract the discriminating buyer.

are a most valuable source of protein, minerals, and vitamins. The yolk is an excellent source of vitamins A, B, and D and also of iron, and is recommended by authorities for early use in the diet of babies.

A project might be undertaken whereby selected retail stores would place on sale graded eggs in cartons, each plainly specifying the grade of eggs contained. Attention should be called to facts regarding (a) the requirements of eggs of different grades, (b) the uses for which different grades of eggs are most suitable, (c) the food value and place of eggs in the diet. Such information might be placed in each carton and also given prominence in advertising and store displays. A properly conducted experiment should suffice to determine the extent and character of consumer preference for various grades of eggs when made available for purchase and to compare sales at retail in stores offering eggs on the basis of grades with sales in similar stores selling only ungraded eggs.

FRUITS

Local Production Short of Demand. The average quantities of various fruits consumed in 1927 by each of the 458 families interviewed were as follows: apples, 2.4 bushels; peaches, 1.4 bushels; pears, .5 bushel; cherries, .3 crate; raspberries, .6 crate; blackberries, .4 crate; strawberries, .6 crate. If all families in the area consumed the same average amounts of fruit as these families, the total consumption in the cities of the area for a year would exceed 60,000 bushels of apples, 35,000 bushels of peaches, 13,000 bushels of pears,

7,500 crates of cherries, and 40,000 crates of berries, including raspberries, blackberries and strawberries.

Considerable quantities of some of these fruits were produced locally, and only a little fruit was shipped out of the area during the year, but the local supplies fell far short of meeting the local demands. The quantities shipped in from outside sources, for consumption in these cities and adjacent territory, so far as information was available, were as follows: apples, 23,929 bushels; peaches, 23,826 bushels, pears, 3,804 bushels,¹ and berries, 25,796 crates.² (No separate data were secured on cherries).

That home canning of fruits is not a lost art in these cities is evident from the fact that most of the families interviewed reported canning fruit for winter use, the average amount of such fruit being 54.2 quarts per family. This represented 46 percent of the total consumption of canned fruit by these families.

Most people in the area purchase their fruits from local stores, tho 14 percent of the purchases by the families interviewed were made directly from farmers. Many of the stores handle fruit produced locally. According to the reports secured from 67 retail dealers, 24 percent of the apples and 31 percent of the pears they handled were purchased directly from the farmers in the vicinity.

Home-Grown Fruits Preferred. That home-grown fruit is popular with the consumers is evident from the fact that of the families interviewed, 70 percent expressed a preference for it over fruit shipped in. The principal reasons given for the preference were better quality, better flavor, and better maturity. All three of these reasons really mean better flavor. Information secured from the retail dealers corroborated the statements obtained directly from the consumers. When the dealers were asked if their customers expressed any preference for local farm produce, over two-thirds answered that they did. The reasons given, in the order of their frequency, were that the products were fresher, of better flavor, and cheaper. Nearly four-fifths of the dealers expressed a decided preference for locally grown products.

The hotels and restaurants also appreciate home-grown fruit, their purchases of apples directly from farmers amounting to 23 percent of their total purchases of this commodity, as reported by 18 eating houses in Rock Island and Moline.

The chief objections to home-grown fruits mentioned by the hotel men and by the 22 percent of local dealers not preferring home-grown products were the lack of a certain and continuous supply, and in some cases lack of proper grading. A few farmers have catered especially to the hotel and restaurant trade, one specializing in apples,

²Based on estimate of 41 pounds to the crate (24-quart crates).

¹Estimated at 50 pounds to the bushel.

another in small fruits, and so on. These farmers have built up a business based on reliable delivery of high-class products. One apple man has a storage house of his own so that he can supply the trade thru a large part of the winter as well as thru the summer and fall months.

Thus while there is a decided preference for home-grown fruit, the markets in the area are being only partially supplied with the local product even during the season of local production.

Opportunities for Increased Production of Better Fruit. Large areas of land in Rock Island county are well suited to fruit production.¹ The climate in this region is favorable for the production of



FIG. 6.—A MODERN AIR-COOLED STORAGE PLANT FOR FRUITS AND VEGETABLES WELL LOCATED FOR RETAIL TRADE

A plant such as this lengthens the period over which local produce may be supplied to consumers in competition with commodities produced at more distant points.

all the fruits that have been mentioned in this discussion with the exception of peaches. On account of the temperature hazard, the 7,898² peach trees reported as in Rock Island county in 1925 are not likely to be much of a factor in the local fruit supply.

Altho only 9 farmers out of 110 reporting sold any fruit and only one made fruit growing his principal business, there is opportunity for a few more farmers to go into the fruit business and for those already in the business to increase their production. Small fruits can be produced advantageously to supply more fully the local market during the season of local production. Cold-storage facilities are available in Davenport, so that apples may be stored for winter trade and thus the marketing of this product extended over a longer season. It has even been suggested that conditions are sufficiently favorable

¹Soil Report 31, Rock Island County Soils, Illinois Agricultural Experiment Station.

²U. S. Census, 1925, Part I, Northern States, page 545.

for the production of apples on the loess soils of Rock Island county to warrant growing them for carlot shipment to outside markets. In meeting the demands of such markets standardized grading is especially important.

Some fruit growers in this trade area, cooperating with the University of Illinois and the local farm bureaus, have worked toward improved practices in fruit production. Three projects have been pro-



FIG. 7.—A PLANT FOR RECEIVING, PROCESSING, AND
STORING FARM PRODUCTS

Adequate storage and handling facilities are essential in centers of large population if local producers are to be given the opportunity of supplying the local market with out-of-season commodities.

moted to this end; namely, "Orchard Soil Management," "Pruning of Fruit Trees and Plants," and "Thinning of Fruits."

The first of these projects is designed to demonstrate "profitable practices relating to the use of nitrogenous fertilizers, animal manure, legume soil-building crops, cover crops, and mulching materials in the orchard." The second is to demonstrate "the correct manner of training the young fruit plants, and the proper method of handling bearing fruit plants during their maturity." The third is to demonstrate to peach and apple growers "the correct methods of thinning young immature fruits, so as to increase the size of fruits left on the tree for maturity."

POTATOES

Local Production Less Than Demand. The acreage of potatoes in Rock Island county at present is less than one-half the acreage grown twenty-five years ago, having been reduced from over 2,500

acres to about 1,200 acres. Local growers furnish only about one-third of the potatoes consumed locally.

Consumer Preferences. Of the 458 families interviewed, 54 percent expressed a preference for home-grown potatoes, 43 percent preferred potatoes shipped in, and 3 percent could see no difference. Flavor, cooking, and eating qualities, as shown in Table 17, were the most important factors in determining the preference for home-

TABLE 17.—REASONS REPORTED BY 458 HOUSEWIVES IN THE AREA FOR PREFERENCES FOR HOME-GROWN OR SHIPPED-IN POTATOES, 1928

Reasons for preference	Preferring home-grown potatoes	Preferring shipped-in potatoes
	perct.	perct.
Flavor.....	30.4	18.2
Cooking qualities.....	12.2	6.3
Cost.....	6.8	1.6
Small disease or insect damage.....	0	2.6
Prejudice or habit.....	2.9	.5
Keeping qualities.....	7.6	13.5
Convenience.....	4.2	2.1
No reason.....	35.9	55.2
Total.....	100.0	100.0

grown or shipped-in potatoes. Uniformity was not considered an important factor if the other desired qualities were obtained.

Dealers' Attitude Toward Home-Grown Potatoes. Some of the outstanding comments of the dealers interviewed were in regard to the grading of local potatoes. Of the potatoes purchased from farmers, 87 percent were field run; 10 percent were graded as U. S. No. 1, and 3 percent as select potatoes. In contrast with these figures, 92 percent of the potatoes purchased thru local wholesale dealers, which in the main are shipped-in potatoes, were U. S. No. 1 and 8 percent were U. S. No. 2.

Even tho 25 percent of the local dealers grade local potatoes after purchasing them from farmers, over 60 percent of them are sold ungraded. Thus locally grown potatoes are at a disadvantage when the careful grading of shipped-in potatoes is considered.

Differences in keeping quality between home-grown and shipped-in potatoes do not seem to be serious. While 43 percent of the stores reported that the spoilage of local potatoes was greater than that of potatoes shipped in, 27 percent reported less loss and 30 percent reported about the same. The heavier spoilage of the home-grown potatoes can be traced to the fact that most of them are sold during the three summer months of July, August, and September, and the remainder of them usually reach market in the fall or early winter.

Thirty percent of the stores reported that they would use more locally grown potatoes if they were available more months of the year; 28 percent stated that they could use more if they were proper-

ly graded; 19 percent if a winter supply were available; 6 percent if outside competition could be met, and 3 percent if farmers would provide a more dependable supply. The remaining 14 percent expressed no ideas on the question. Of the stores interviewed, 85 percent reported that the farm supply of potatoes was adequate during the summer months.

Problems Involved in Increased Production. While so far as consumers or dealers are concerned, it would seem that the acreage of potatoes grown locally could be increased to advantage, producers must take into account the competition of more favorably located areas. Corn-belt states in general, including Ohio, Indiana, Missouri, and Iowa, as well as Illinois, produce fewer potatoes than are used locally, while the states to the north, including Minnesota, Wisconsin, and Michigan, produce far in excess of their needs. The average annual deficiency of potatoes in Illinois for the five-year period 1921 to 1925 amounted to 17,500,000 bushels. While these facts suggest that it may be difficult for Illinois farmers to compete with production in these northern states in raising all of the potatoes needed here, further testing out of approved practices of production seem to be justified.

Successful potato production in Illinois requires considerable attention to the control of insects and diseases. This means that if one is to grow potatoes successfully, spraying machinery is essential. Also, if any large acreage is handled, other special potato machinery is needed to reduce the cost of production. Most of the potato growers in the area studied devote only a small acreage to the crop and do not feel justified in making a large outlay for special equipment. The area, however, is well adapted to growing some varieties of potatoes, especially the Early Ohio. Some communities in Illinois have been quite successful in growing early potatoes and even some potatoes for the late market thru following the most approved methods of production. In some sections the growing of what are called "straw" potatoes, that is, potatoes which are grown under a covering of straw, has been a success. This has the advantage of conserving the moisture and improving the quality of the potato, and has been successful farther south in the state at least. It is hardly possible, however, to follow such practice on a large acreage because of the amount of straw required.

The fact that about one-third of the potatoes used in this area are grown locally suggests that some people find them a profitable crop, at least in meeting the demand during a portion of the year. While the small acreage devoted to potatoes on most farms does not justify the ownership of special potato equipment, careful practice in growing potatoes might justify some farmers in growing a larger acreage and in making use of good equipment. It should be possible

also for farmers to own special equipment cooperatively, when the acreage grown on single farms does not justify individual ownership.

VEGETABLES

Preference for Home-Grown Vegetables. Tomatoes, carrots, green beans, cabbage, and sweet corn are the vegetables that were purchased most often by the 458 families interviewed. No effort was made to get a statement of the amount of vegetables consumed by these families during the year since it was felt that answers to such a question could not be very accurate.

Nearly 70 percent of the vegetables purchased by these families were procured from the local stores, 20 percent from farmers, and 10 percent from street peddlers, as nearly as could be ascertained. Vegetables were purchased from local stores thruout the year, but from farmers and peddlers mainly during the summer. Part of the vegetables produced in summer were canned for winter use. The average quantity of vegetables canned at home was 35 quarts per family and represented 29 percent of the total consumption of canned vegetables. In addition to the vegetables purchased, 42 percent of the housewives reported procuring part of their vegetables from their home gardens.

Many of the vegetables bought by consumers thru the local stores are home-grown. The stores reported making extensive use of local products during the summer months. Several farmers near these cities devote all of their efforts to vegetable production, some selling to local stores and others directly to consumers.

Very few vegetables are shipped out of the area except onions and tomatoes grown for a canning factory in Muscatine. During the year 2,127,250 pounds of onions and 5,320,000 pounds of tomatoes were sent out of the area. Home-grown cabbage dominates the markets during July, August, and September.

On the other hand, considerable quantities of vegetables are shipped into this area. These included 268,050 pounds of onions, 739,290 pounds of melons, 538,190 pounds of cabbage, 143,090 pounds of tomatoes, 631,110 pounds of lettuce, 256,650 pounds of celery, and 2,739,470 pounds of other vegetables.

Eighty-six percent of the housewives interviewed expressed a preference for home-grown vegetables, and 70 percent felt sure that they could tell the difference between the home-grown products and those shipped in.

Further Opportunities for Local Growers. The local markets could be more fully supplied with home-grown products if provision were made on farms for the winter storage of root crops and cabbage. Cabbage is abundant in summer, but there is little effort toward producing a fall crop and storing it for winter. The same seems to be largely true of root crops. The principal home-grown vegetables men-

tioned as available in winter were lettuce, tomatoes, and carrots. The lettuce and tomatoes were grown in a local greenhouse; the carrots probably were stored.

Altho only 10 of the 110 farmers reported selling vegetables, there are certain sections in this area where vegetable production is practiced quite extensively. Some of the soils contain enough sand to be well adapted to the production of early vegetables. In favorable seasons the local markets are sometimes oversupplied with home-



FIG. 8.—HUCKSTER WAGONS TAKE PRODUCE TO HOMES THRUOUT THE CITIES OF THE AREA

Much of the produce handled by these wagons is home-grown.

grown vegetables. This was true in 1928. On the other hand, there usually is a shortage in dry seasons as a result of low yield. This irregularity of supply from season to season is a handicap to the most effective marketing.

Vegetable producers for the local city markets may well give more attention to the results of two extension projects developed by the University of Illinois and the local farm bureaus. One project, "Commercial Gardening Demonstrations," dealing largely with the proper fertilizing of vegetable crops, has been carried on in several counties. In a demonstration in a nearby county during the past season the yields of cabbage were doubled by the use of the right kind of fertilizer. In 1927 comparable results were secured on tomatoes. A project to increase the use of "Disease-Resistant Cabbage and Tomatoes" has been carried on in various counties. The project demonstrated that these two important crops can be grown in disease-infected soil if resistant varieties are planted.

In the supplying of the winter demand for vegetables a further field for possible improvement in marketing is suggested. A study might be made to find out whether local market gardeners could increase their business and its profitableness by storing fall-grown roots and other vegetables, and selling them during the winter. Vegetables

that might well be considered in this connection are beets, carrots, parsnips, salsify, turnips, celeriac, cabbage, onions and squashes.

To overcome the irregularity of the supply of vegetables in different seasons the installation of irrigation systems on vegetable areas located near the rivers might well be given careful consideration. Such irrigation has proved profitable in various other localities where vegetable crops of high value per acre were grown, and might be an effective means in this area of insuring a more regular supply of home-grown vegetables over a longer period of the year.

ADDITIONAL ASPECTS OF THE MARKETING SITUATION

Facts were secured in the area concerning (1) the tendencies in the use of transportation facilities in the case of farm products; (2) the relation between prices that wholesale and retail dealers have paid local producers and those paid by consumers; (3) developments in the cooperative shipment of livestock; and (4) the extent to which roadside marketing has been affording an outlet for farm products.

TRANSPORTATION

All inbound and outbound shipments of corn, oats, barley, rye, hay, sweet potatoes, and limestone during the year were made in carload lots (Table 18). In the case of all the other selected commodities there was some less-than-carload shipment or some shipment in trucks.

Less-than-carload shipments were indicated as constituting 100 percent of the outbound movement of pears and fruit not specially designated except as "other" fruit, and of the inbound shipments of lemons. Other products that moved frequently in less-than-carload shipments were: (outbound) cream, 37 percent; eggs, 23 percent; feed, 22 percent; and dressed poultry, 13 percent; (inbound) onions, 95 percent; cream, 37 percent; cheese, 23 percent; oleo, 13 percent; and grapefruit, 11 percent.

Trucks were used widely to bring in fruits, vegetables, dairy, and poultry products, and to ship out live poultry, cream, and feed. They were used exclusively for outbound shipments of tomatoes. Ninety-five percent of live poultry outbound was so shipped; 89 percent of onions; 78 percent of feed; 63 percent of cream; and 39 percent of hogs. Truck shipments accounted for 100 percent of the inbound raw milk, live poultry, and wheat. Thus more live poultry, cream, feed, and tomatoes were handled by truck than by rail in both inbound and outbound movements.

PRICE MARGINS

Information on prices was secured from five different sources. Prices received by farmers by months during the year were reported for cattle, hogs, poultry, eggs, cream, butter, and milk. Prices for

TABLE 18.—PERCENTAGE OF FARM PRODUCE TRANSPORTED INTO AND OUT OF AREA
BY VARIOUS METHODS, SEPTEMBER 1, 1927, TO
AUGUST 31, 1928

Product	Outbound			Inbound		
	Carload	Less than carload	Truck	Carload	Less than carload	Truck
<i>Livestock and livestock products</i>						
Cattle.....	92	...	8	99	1	...
Hogs.....	61	...	39	100	...	...
Sheep.....	91	...	9	100	...	...
Live poultry.....	...	5	95	...	...	100
Dressed poultry.....	87	13	22	100	...	...
Eggs.....	55	23	...	...	*	100
Butter.....	None	None	None	...	*	100
Cheese.....	None	None	None	...	23	77
Cream.....	...	37	63	...	37	63
Raw milk.....	None	...	...	...	...	100
Evaporated milk.....	79	*	20	90	7	2
Oleo.....	None	None	None	9	13	78
Horses.....	100	*	...	100	...	...
<i>Crops</i>						
Corn.....	100	...	...	100	...	...
Oats.....	100	...	...	100	...	...
Wheat.....	100	...	...	...	...	100
Barley.....	100	...	...	None	None	None
Hay.....	100	...	...	100	...	...
Feed.....	...	22	78	4	6	90
Rye.....	100	...	...	None	None	None
<i>Vegetables</i>						
Potatoes.....	92	8	...	68	*	32
Onions.....	10	1	89	...	95	5
Melons.....	None	...	...	45	*	55
Cabbage.....	None	...	...	31	*	68
Tomatoes.....	...	...	100	22	2	76
Lettuce.....	None	...	...	22	2	76
Celery.....	None	...	...	8	2	90
Other vegetables.....	None	...	...	78	3	19
Sweet potatoes.....	None	...	...	100	...	...
<i>Fruits</i>						
Berries.....	None	...	...	10	*	90
Apples.....	None	...	...	44	1	55
Peaches.....	None	...	...	30	...	70
Pears.....	...	100	...	25	1	74
Grapefruit.....	None	...	...	89	11	...
Oranges.....	None	...	...	95	5	...
Lemons.....	None	...	...	...	100	...
Other fruit.....	...	100	...	66	9	25

*Less than 1.

poultry, eggs, butterfat, and butter were taken as quoted by a produce company in Davenport for the fifteenth day of each month. Wholesale prices were collected from three wholesale houses by months on important fruits and vegetables (Table 19). Four grocery stores furnished prices for poultry, eggs, butter, apples, potatoes, sweet potatoes, cabbage, and onions, and one large grocery store supplied retail prices on 23 products for three days of each month in the year (Table 20).

The amounts by which retail prices of eggs, sweet potatoes and head lettuce stood above wholesale prices were fairly uniform throughout the year. Cabbage, celery, spinach, and onions had retail prices above the wholesale at all seasons of the year, but with spreads or margins sometimes wide and sometimes narrow. The fact that retail

TABLE 19.—MONTHLY WHOLESALE PRICES OF FRUITS AND VEGETABLES REPORTED BY WHOLESALE DEALERS IN THE AREA FOR YEAR ENDED AUGUST 31, 1928

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.
Apples, bushel.....	\$2.87	\$2.65	\$3.03	\$3.12	\$3.57	\$3.76	\$3.56	\$3.85	\$3.71	\$4.00	\$3.61	\$2.08
cts.		cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
Cabbage, pound.....	2.5	2.1	2.3	2.0	3.0	4.0	5.8	6.3	5.5	2.0	1.5	1.5
Carrots, bunch.....	5.4	3.0	3.3	7.1	6.3	7.1	7.1	7.1	6.7	2.5	2.5	2.5
Celery, bunch.....	6.5	6.5	8.7	9.4	8.6	10.2	9.2	10.6	15.4	5.6	5.4	5.4
Grapes, pound.....	8.3	6.7	6.8	7.5	...	...	...	21.7	10.8	4.2	4.2	4.2
Green beans, pound.....	15.0	12.5	15.0	12.5	12.5	24.0	22.5	17.5	13.3	10.8	10.8	10.8
Head lettuce, head.....	8.3	8.6	9.7	12.5	10.4	8.3	7.9	8.9	8.3	9.3	11.4	10.0
Leaf lettuce, pound.....	20.0	20.5	22.5	3.0	4.0	5.0	15.0	17.5	8.0	...	...	...
Onions, pound.....	4.3	3.5	3.0	27.5	27.5	29.0	5.0	6.0	3.0	2.0	4.5	3.5
Potatoes, peck.....	28.0	27.7	27.5	27.5	27.5	36.2	33.2	28.0	32.5	20.7	21.7	21.7
Sweet potatoes, pound.....	3.5	3.0	2.6	2.9	3.9	3.9	3.9	3.9	6.0	...	12.5	...
Spinach, pound.....	10.4	12.5	15.2	22.2	14.3	10.4	12.7	14.0	12.7	10.0	10.0	10.0
Tomatoes, pound.....	1.9	11.2	10.6	16.9	14.4	13.7	17.7	15.6	15.6	11.6	10.9	8.7

TABLE 20.—MONTHLY RETAIL PRICES OF MILK, BUTTER, EGGS, FRUITS, AND VEGETABLES REPORTED BY RETAIL DEALERS IN THE AREA FOR YEAR ENDED AUGUST 31, 1928

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
Apples, bushel.....	\$2.85	\$3.37	\$3.53	\$4.05	\$4.45	\$4.75	\$5.33	\$5.33	\$5.20	\$4.00	\$2.70	\$2.64
cts.		cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
Cabbage, pound.....	4.0	4.7	7.0	7.0	8.0	8.0	7.0	7.0	7.0	6.0	3.7	3.7
Carrots, bunch.....	5.0	6.7	10.0	11.0	13.0	13.0	13.0	13.0	13.0	8.3	5.0	4.2
Celery, bunch.....	12.7	11.7	18.3	10.0	15.0	15.0	16.7	21.0	21.0	25.0	22.7	12.7
Grapes, pound.....	11.2	12.5	13.3	...	...	...	...	...	...	...	...	...
Green beans, pound.....	15.0	19.0	20.0	20.0	60.0	52.5	25.0	35.0	37.5	20.0	15.0	15.0
Head lettuce, head.....	18.3	14.3	20.0	21.7	21.7	23.3	16.0	14.3	14.3	30.0	30.0	24.7
Leaf lettuce, pound.....	4.4	4.6	5.5	5.8	6.5	20.0	15.0	15.0	17.5	10.0	12.5	12.5
Onions, pound.....	4.3	31.2	33.7	41.2	42.5	41.2	42.5	42.5	45.0	42.5	4.3	4.3
Potatoes, peck.....	24.4	30.0	6.0	7.0	8.0	10.0	10.0	10.0	10.0	10.0	19.9	19.9
Sweet potatoes, pound.....	5.0	20.0	24.3	17.7	21.5	20.3	14.2	15.0	15.7	10.0	5.0	5.0
Spinach, pound.....	5.0	13.7	35.0	36.7	35.0	31.7	33.3	38.3	38.3	33.0	15.0	7.5
Tomatoes, pound.....	10.0	10.0	10.0	11.0	11.0	56.8	57.1	56.1	54.9	53.4	11.0	11.0
Whole milk, quart.....	55.8	56.4	56.5	57.0	57.2	53.6	52.0	42.0	37.5	33.0	52.4	53.0
Butter, pound.....	45.6	46.9	51.7	39.7							32.8	35.6

prices were below those quoted by wholesale dealers during one or more parts of the year in the case of potatoes, cabbage, and onions is probably due to farmers selling directly to retailers produce of less certain quality than that handled by the wholesale dealers. Improved grading would doubtless have made it possible to sell more of the locally grown farm produce at better prices.

Two conclusions seem to be at least tentatively suggested:

1. Farmers in the area were receiving, on the average, prices for their product that were fully as high as were quoted by the wholesale produce houses for products of comparable quality. This may be attributed to two facts: most locally grown produce was offered in a fresh condition, and local buyers in small towns and the retail grocery stores were bidding for the produce.

2. Following a short crop retail prices remain for a short time at higher levels after wholesale prices have gone down. While during surplus seasons farmers can profit very little by direct selling to consumers as compared with selling to wholesalers, during seasons of short crop they can secure from 25 to 50 percent more by selling directly even tho more effort is involved.

COOPERATIVE SHIPPING OF LIVESTOCK

Cooperative livestock shipping associations were operated at 15 shipping points in the area in 1927. These associations handled 48 percent of all livestock shipped out of the area in carlot quantities (Table 21).

It is a common practice for a feeder to sell less than carload lots thru the association but to ship full carloads in his own name. Prod-

TABLE 21.—CARLOADS OF LIVESTOCK SHIPPED FROM FIFTEEN SHIPPING POINTS IN THE AREA DURING THE YEAR ENDED AUGUST 31, 1928, AND PROPORTION SHIPPED BY ASSOCIATIONS

Station	Carloads of livestock shipped			
	Total	Otherwise than by associations	By associations	
			Number	Percent
Barstow.....	13	7	6	46.1
Coal Valley.....	40 ¹	...	40	100.0 ¹
Cordova.....	74	9	65	87.8
Crampton.....	53	29	24	45.3
Geneseo.....	699	232	467	66.8
Green River and Colona.....	135	76	59	43.7
Hillsdale.....	106	34	72	67.9
Illinois City.....	561 ²	398	163 ²	29.0 ²
Milan.....	14	...	14	100.0
Orion.....	254	106	148	58.3
Osco.....	256	89	167	65.2
Port Byron.....	78	18	60	76.9
Reynolds.....	427	251	176	41.2
Taylor Ridge.....	268	16	252	94.0
Warner.....	72	29	43	60.0
Total from 15 points.....	3 050	1 294	1 756	57.6
Total from other points.....	618 ¹ ₂	1 912 ¹ ₂	1 756	47.9
Grand total.....	3 668 ¹ ₂	1 912 ¹ ₂	1 756	47.9

¹Station closed; shipments billed thru other stations.

²No railroad; shipments trucked to Muscatine, Iowa.



FIG. 9.—TYPICAL COOPERATIVE LIVESTOCK SHIPPING FACILITIES

Farmers throughout the area have access to cooperative shipping association service.

uce shipped otherwise than by associations includes, therefore, considerable quantities shipped in carload lots by individual producers.

Truck operators doing custom hauling, as well as those acting for packing houses, have caused competition for the livestock shipping associations. No part of the trade area, it is believed, is free from this



FIG. 10.—TRUCK LOAD OF HOGS ON WAY TO A NEARBY MARKET

Truck transportation is playing an important part in the marketing of farm products. This may be expected to increase with further improvement of the local road system.

competition. A large packing company in Davenport and a Muscatine buyer representing one of the large packing companies in Chicago trucked a total of nearly 1,000 carloads of hogs in 1927. With no railroads in the west end of Rock Island county, all of the stock from that section was trucked to Muscatine for shipment.

The average handling charge made by local associations to cover commission for management was 5 cents for a hundredweight of cattle and 4 cents for a hundredweight of hogs.

The development of local associations for shipping livestock appears to have reached a point where nearly all farmers have access to these facilities.

ROADSIDE MARKETS

Fourteen roadside markets were found in the trade area (Table 22). These were scattered widely over the territory.

In eight markets the gross sales were less than \$1,000 a year, the average being only \$238. These markets were located at an average distance of ten miles from the larger cities and were operated as side lines to a general farming business. They were open, on the average, only three months in the year.

TABLE 22.—COMPARISON OF EIGHT SMALL AND SIX LARGE ROADSIDE MARKETS IN THE AREA, 1928
(Figures are yearly averages per market or farm)

	Eight markets with annual business of less than \$1,000	Six markets with annual business of \$1,000 or more
Volume of business.....	\$238	\$8 376
Acres in farms on which market was located.....	25	16
Acres used to produce products sold.....	9	16
Miles from Rock Island or Moline.....	10	4
Years markets have been operated.....	2.5	2
Products produced on own farm, percentage.....	100	60
Months market is operated.....	3	8
Amount spent for advertising.....	...	\$92
Billboards used for market.....	0	2
Markets rated good on:		
Appearance of structure.....	2	5
Appearance of displayed products.....	2	6
Protection of products from sun, rain, etc.....	1	4
Parking space for customers.....	2	4
Lighting facilities.....	0	5
Personal appearance of sales force.....	0	5
Personality and ability of sales people.....	1	6

The six larger markets did an average annual business of \$8,376 each, while one of them sold over \$20,000 worth of products last year. Two of these markets were open thruout the year. On the average, the roadside markets were open eight months. The five markets with the largest gross turnover were located on paved roads within five miles of the larger cities and in buildings of good appearance, where the products were well protected from the elements. The buildings were well lighted for evening trade and there was usually plenty of parking space for autos near these markets. The products were well displayed and the attendants were of good personality and sales ability.

In the case of the smaller roadside markets, all the produce sold was produced on the farm where the market was located, while in

the group of larger markets 60 percent of the products were produced on the home farm, 25 percent on nearby farms, and 15 percent purchased from dealers.

Fruits and vegetables were the principal products sold in these markets. Apples predominated, and were handled in 9 of the 14 markets. Other products given prominent place were tomatoes, sweet corn, pears, and melons, each of these being mentioned as handled in either three or four of the markets. It is surprising that only one market reported the sale of cider and only one the sale of chickens. Still more surprising is the absence of any mention of the sale of eggs by any of these markets. These three commodities are usually considered well adapted to roadside sale.

In general the prices at which goods were offered in the roadside markets were somewhat lower than for the same grade of products in local stores. Ten of the markets furnished containers with the goods sold, tho one made an extra charge for this service.

The roadside market business in the area is not overdone. The markets are not large in number and are well scattered. They furnish good quality products at fair prices.

Producers farming near hard roads might well unite in supplying products for sale at a roadside market. One of their number might sell for the others on commission or several of them might cooperate in providing the necessary equipment and labor.

THE SITUATION SUMMARIZED

The collection of facts concerning a rural-urban situation is one thing. The interpretation of the facts in a manner best calculated to point the way to a proper and logical development of the area studied, is quite another thing. The facts as such are valuable; their interpretation is much more valuable.

In the present study the data collected are so extensive and varied that the reader, wishing to familiarize himself with the details, will need to turn both to the body of the bulletin and to the Appendix. An attempt is made here, however, to give a brief statement of the situation with respect to the production and consumption of agricultural products in the trade area described, and to summarize suggestions which, if carried out, might be expected ultimately to improve the financial status of many of the farmers of the area.

1. From 70 to 90 percent of the income on typical farms in the Rock Island and Moline area comes from the sale of livestock and livestock products. The greater part of the remaining income is received from the sale of the principal field crops—corn, oats, wheat, barley, and hay. Well over 90 percent of the farm land in these two counties exclusive of pasture and woodland is devoted to the growing of these crops.

2. An analysis of the situation indicates that no radical change in the type of farming in the area would be desirable. Many farmers, however, would do well to include a larger proportion of legumes in their cropping plans. The data show that it probably would be desirable to increase the local production of fruit, vegetables, milk, poultry, and eggs. In any such expansion producers should adjust their production with due regard to local consumer demand and to their ability to compete with producers of similar products now supplying the needs of consumers.

3. The more successful farmers in this area, as in other areas of the state, have as a rule spent from five years to a generation of intelligent effort in improving the soil, establishing a good cropping system and selecting good varieties, developing efficient herds of livestock, and equipping their farms for economical operation in accordance with carefully thought-out plans. Close observance of the basic principles of good farm management, such as the planting of a high percentage of land to the more profitable crops, the securing of high yields, the production of and the efficient handling of livestock, the development of a sufficient volume of business to give an adequate income, and the efficient use of labor, power, and machinery, has been of more importance in determining the net income of these farms than has the particular type of farming followed.

4. Under present conditions the more profitable crops in the part of Illinois in which the area is located are corn, wheat, barley, alfalfa, and sweet clover. The percentage of crop land in each of these crops at the last Agricultural Census (1924) was as follows: corn, 48 percent; wheat, 4 percent; barley, 1 percent; alfalfa, 2 percent; and clover, including sweet clover, 3 percent. The remainder of the land was in oats, rye, and other hay crops. Under good farm practice legumes should be grown on 20 to 25 percent of the land, which is a much larger proportion than is now in legumes.

5. An average of 46 bushels of corn to the acre was obtained in 1927 on selected farms from which careful records were procured. The best one-third of these farms grew an average of 52 bushels to the acre, while the average of all farms in Rock Island county was 33 bushels and in Henry county 30 bushels an acre.

6. The opinion too generally prevails that soil-improvement methods are applicable mainly to poor soils, while the fact is that for a given expenditure the income per acre can frequently be increased more on good land that has been continually in grain crops and to which practically no fertilizer has been applied, than on naturally poor land.

7. Financial conditions perhaps more than lack of information or of disinclination to use available information have retarded soil improvement on many farms. A period of years is frequently required

to get the full benefit of money expended for limestone and phosphate, and one or more rotations of crops reaching over a period of years are required to bring low producing land into a reasonably high state of production. Thus while returns on money expended for intelligent soil improvement are large, it is difficult in a period of depressed agriculture for many men to make the investment. Encouragement such as a banker can give is needed by many farmers to induce them to incur the expense needed in soil improvement.

8. The average production of all cows in Rock Island and Henry counties is about 3,500 pounds of milk a year, according to the 1925 Agricultural Census. This low production is to be accounted for in part by the milking of cows that are largely of beef breeding, the production of calves for the feed lot being considered an important part of the cattle enterprise. There is definite need, however, for improving the productivity of the dairy cows in this area.

9. The daily consumption of fluid milk in the area was slightly less than three-fourths of a pint per person. This represents a yearly consumption of 26,000,000 pounds, or the product of about 6,000 cows giving 4,500 pounds of milk a year, which is the average production of the state. In addition, the yearly consumption of butter, cheese, cream, ice cream, and evaporated milk represents the product of 18,000 more cows. If the fluid milk now consumed in the area was to be produced in the area, and the local production of dairy products maintained at its present level, 1,800 more cows of the above production would be needed. Much of this increase could be secured by obtaining higher production per cow thru better selection, feeding, and management.

10. Two percent of the 458 consumers interviewed used Grade A milk, 73 percent Grade B, and 25 percent Grade C. Grade A milk sold up to 22 cents a quart and was produced under the best of conditions. Grade B milk is pasteurized and retailed at 11 to 13 cents a quart. Grade C milk was not a standardized product and sold at 9 to 11 cents a quart.

11. The supply of local vegetables and fruits has been inadequate except during the summer and early fall. It appears that more attention might be given to the growing and storage of apples, cabbage, and root crops for the winter market.

12. Of the dealers handling farm, garden, and orchard produce, 69 percent reported that the customers expressed preference for locally grown products; 12 percent reported that the customers objected to local produce, and 19 percent that the customers really did not know the difference between local and outside produce. Twenty-two percent of the dealers reported that as dealers their chief objection to using local farm produce was the lack of a dependable supply. A few objections to local produce were stated by dealers to be due to lack of grading and to poor quality.

13. There are relatively few roadside markets in the area and those that are well located and managed have been doing a good volume of business. Only a moderate expansion of this business, however, could take place without danger of reducing the volume of trade for each market to an extent that would be unsatisfactory.

14. The "more successful farmers" referred to earlier in this summary may be said to have been "more successful" in the sense that they have succeeded better than other farmers in holding their own during the period of agricultural depression. The group is small compared with the total number of farmers in the area.

15. That many farmers in the area are aware of the necessity for making changes in their farm practice is evidenced by the fact that thru their farm bureaus they have selected from among the projects offered by the Agricultural Extension Service of the University of Illinois those suited to the local situation, and are working systematically and effectively to apply the information thus obtained. Other evidence of progress among the farmers of the area is their membership in and active promotion of local, state, and national organizations that are attempting to solve their problems.

16. It is recognized, however, that marked improvement could be secured by the more general adoption of a better balanced system of farming, including the liberal use of legumes as a means of helping to improve or maintain the fertility of the land and of increasing the efficiency of livestock production; the more careful selection of disease-resistant crops and properly harvested, stored, and tested seed; and the giving of more attention to livestock sanitation and breeding so that only superior animals that make efficient use of their feed would be used to produce meat, milk, and other animal products. The more general adoption of a simple and adequate system of farm accounts would bring to farmers greater realization of the importance of these improved practices.

17. The following facts obtained from 412 typical farms indicate to some extent the standard of living in the rural communities studied. Forty-three percent of the owner-farmers had electric current; 36 percent had running water in the kitchen, 31 percent bathrooms; 60 percent had furnaces and 40 percent stoves only; 68 percent had washing machines, 46 percent had refrigerators, and 62 percent had either hand or electric vacuum cleaners. Among the tenants 21 percent had electric current; only 17 percent had running water in the kitchen; only 9 percent had bathrooms with running water, 37 percent had furnaces, 63 percent stoves only; 52 percent had laundry facilities including machines, 22 percent had refrigerators, and 56 percent had hand or electric vacuum cleaners.

18. One of the most significant facts brought out by the study is the opportunity for consumer education with reference to proper food habits. When considered from the standpoint of approved diets, the

information obtained indicates an underconsumption of dairy products, eggs, fruits, and vegetables, in the cities of the area.

19. An increased consumption of local dairy products, eggs, fruits, and vegetables, however, is dependent to a large extent upon better grading, so that sales may be made according to quality. Ungraded commodities of local producers are now seriously handicapped by competition with well-graded shipped-in products. For example, 92 percent of the eggs bought from farmers by the retailers interviewed were of no stated grade, and one third of the retailers reported that they graded the eggs before selling them. It is evident that producers are in need of instruction in the production and grading of quality products.

20. For quality production and marketing to be successful, differences in grades would need to be appropriately recognized by both dealers and consumers. The fact that 30 percent of the housewives interviewed expressed a willingness to pay premiums of 5 cents a dozen or more for eggs of uniformly high quality may be taken as some indication of consumer attitude toward quality products.

21. Producers in general do not come in direct contact with consumers. It is essential, therefore, that dealers in farm produce cooperate in any program planned for the improvement of producer-consumer relations. The dealer, by reason of his position between producer and consumer, has an opportunity on the one hand to help bring to farmers the realization of the importance of well-graded products of good quality, and on the other hand, by proper advertising and display, he can call the attention of consumers to the desirability of buying according to grade.

RECOMMENDATIONS

The recommendations growing out of this study are:

1. That no radical change in the general type of farming in the area be undertaken, but that the production of fruit, vegetables, milk, poultry, and eggs be so adjusted as more nearly to meet local demands.
2. That consumer education in regard to desirable food habits and the selection and purchase of foods on the basis of quality be undertaken.
3. That producers be instructed in the grading and packing of food commodities, so that the local farm products will come to market in condition to attract the discriminating buyer and successfully compete with shipped-in products.
4. That the cooperation of dealers be secured in order to expedite efforts to inform producers and consumers with reference to the advantages of graded produce.

5. That local and state projects looking to more efficient and better balanced farm production be extended so as to reach more producers; and that every encouragement be given to the 4-H Club work and to the agriculture and home economics instruction in the high schools as among the most promising long-time activities for the improvement of farming and farm life.

6. That a joint committee be created from local farm, business, and civic organizations to formulate and put into effect a local developmental program in harmony with the foregoing recommendations; and that any assistance available from the University be utilized both in the formulation of plans and in putting the plans into effect.

In carrying out the above recommendations it is important that local plans be adapted to local conditions; also that the same care that has been exercised in this preliminary study be observed in formulating the detailed steps to be taken in the local program. Rather than attempt too many adjustments, it is suggested that a few lines of activity which give promise of being most helpful be selected for the initial efforts.

COORDINATING THE EFFORTS OF VARIOUS AGENCIES

In order to plan and to carry out successfully a sound developmental program for a rural-urban area the efforts of all agencies in a position to give constructive assistance should be carefully co-ordinated. There are opportunities for all interested organizations, each working with those groups with whom it has most effective contacts. Consumer education, for example, in an area having a large proportion of urban to rural population, is largely a matter of concern to urban organizations. The efforts of such organizations will be more effective, however, if they work in close cooperation with the county home adviser who, as a member of the organized extension work of the State Agricultural College and the federal government, is informed with regard to the most approved methods of meeting the problems of homemakers.

Problems in the production and marketing of farm products should be approached from the farm point of view. In the solution of these problems, the local farm advisers as members of the organized state and federal extension work, cooperating with organized groups of farmers, have proved to be the most effective agencies.

It is advisable that proven agencies should take the lead both in furthering existing agricultural projects and in developing new projects looking to better adjustments involving farm products.

APPENDIX

TABLE 23.—UTILIZATION OF FARM LAND IN HENRY AND ROCK ISLAND COUNTIES, ILLINOIS, AND SCOTT COUNTY, IOWA, 1924¹

	Areas devoted to crops indicated			Distribution of all farm land and of all crop land		
	Rock Island	Henry	Scott (Iowa)	Rock Island	Henry	Scott (Iowa)
	acres	acres	acres	per cent.	per cent.	per cent.
Approximate land area.....	271 360	527 360	287 360	.....	.....	.....
All land in farms.....	224 804	467 483	254 825	40	29.3	33
Pasture and other farm land.....	90 220	136 939	84 101	60	70.7	67
Total crop area.....	134 584	330 524	170 724	(100)	(100.0)	(100)
Crop area in:						
Grains						
Corn.....	64 744	162 852	75 613	48.1	49.3	44.3
Oats.....	24 781	76 892	34 963	18.4	23.2	20.5
Wheat.....	5 588	13 782	16 932	4.2	4.2	9.9
Other grains.....	4 180	11 185	4 978	3.1	3.4	2.9
Hays						
Alfalfa and clover	6 740	9 983	7 220	5.0	3.0	4.2
Other hay.....	18 182	32 939	24 867	13.5	10.0	14.6
Other crops						
Potatoes.....	1 226	444	1 415	.9	.1	.8
Tomatoes.....	290	5	56	.2	.....	.....
Sweet corn.....	257	488	90	.2	.2	.1
Cabbage.....	154	6	89	.1	.....	.1
Onions.....	74	82	638	.....	.....	.4
Strawberries.....	75	15	81	.1	.....	.....
All other crops.....	8 293	21 821	3 782	6.2	6.6	2.2
				(100)	(100.0)	(100.0)

¹U. S. Census, 1925.

TABLE 24.—NUMBERS OF LIVESTOCK, BY CLASSES, IN HENRY AND ROCK ISLAND COUNTIES, ILLINOIS, AND SCOTT COUNTY, IOWA, JANUARY 1, 1925¹

	Total number			Number per 1,000 acres of farm land		
	Rock Island	Henry	Scott (Iowa)	Rock Island	Henry	Scott (Iowa)
Horses and mules.....	8 993	19 085	10 616	40	41	42
Cattle						
Dairy.....	8 142	9 103	12 598	36	19	49
Beef.....	11 171	33 248	15 674	50	71	62
Sheep.....	2 719	6 465	1 692	12	14	7
Swine.....	67 820	139 549	88 094	302	298	346
Chickens.....	212 510	342 982	280 430	945	734	1 100

¹U. S. Census, 1925.TABLE 25.—POPULATION OF ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, AND SCOTT COUNTY, IOWA, AND LARGEST CITIES IN THOSE COUNTIES, 1890-1920¹

	1920	1910	1900	1890
Rock Island county.....	92 297	70 404	55 249	41 917
East Moline.....	8 675	2 665	.....	.....
Moline.....	30 734	24 199	17 248	12 000
Rock Island.....	35 177	24 335	19 493	13 634
Silvis.....	2 541	1 163	.....	.....
Henry county.....	45 162	41 736	40 049	33 338
Scott county, Iowa.....	73 952	60 000	51 558	43 164
Davenport.....	56 727	43 028	35 254	26 872
Bettendorf.....	2 178	909	.....	.....

¹U. S. Census.

TABLE 26.—NUMBER OF PERSONS EMPLOYED BY FIVE COMPANIES IN THE AREA, 1924-1928

Month	1924	1925	1926	1927	1928	Average for four years 1924-1927
January.....	6 478	6 528	7 164	7 083	6 552	6 813
February.....	6 401	6 459	7 208	6 983	6 531	6 763
March.....	6 374	6 513	7 164	7 017	6 751	6 767
April.....	6 518	6 636	7 223	6 967	6 869	6 836
May.....	6 576	6 619	7 181	7 217	7 352	6 898
June.....	6 416	6 798	6 954	7 455	7 839	6 906
July.....	5 992	6 487	6 679	7 619	.....	6 694
August.....	6 278	6 894	6 955	7 659	.....	6 946
September.....	6 394	6 942	6 970	7 324	.....	6 907
October.....	6 515	7 064	7 080	7 388	.....	7 012
November.....	6 644	7 091	7 644	7 280	.....	7 165
December.....	6 426	7 056	7 328	6 967	.....	6 944
Average.....	6 418	6 757	7 129	7 246	6 982 ¹	

¹Six months' average.

TABLE 27.—NUMBER OF AND AVERAGE WAGES OF SALARIED AND OTHER PERSONS EMPLOYED BY THREE COMPANIES IN THE AREA, JANUARY, 1924, TO SEPTEMBER, 1928

	1924	1925	1926	1927	1928
Number					
Salaried employees.....	225	244	267	218	139
Other employees.....	1 386	1 748	1 914	1 511	1 502
Total.....	1 611	1 992	2 181	1 729	1 641
Ratio of salaried to other employees.....	1 to 6.2	1 to 7.2	1 to 7.2	1 to 6.9	1 to 10.8
Yearly income					
Salaried employees.....	\$2 105	\$2 137	\$2 141	\$2 196	\$2 098
Other employees.....	\$1 343	\$1 406	\$1 444	\$1 386	\$1 395

TABLE 28.—AVERAGE MONTHLY WAGE PAID TO EMPLOYEES OF FIVE COMPANIES IN THE AREA, 1924-1928

Month	1924	1925	1926	1927	1928	Average for four years 1924-1927
January.....	\$128	\$131	\$131	\$129	\$132	\$130
February.....	124	126	127	123	130	125
March.....	126	134	136	136	133	133
April.....	128	128	133	129	130	129
May.....	129	126	129	130	134	128
June.....	124	124	127	130	124	126
July.....	132	128	132	126	...	129
August.....	134	126	132	132	...	131
September.....	127	128	129	129	...	128
October.....	134	134	134	132	...	133
November.....	122	124	128	130	...	126
December.....	130	138	134	130	...	133
The year.....	\$128	\$129	\$131	\$130	\$130 ¹	\$129

¹Six months' average.

TABLE 29.—AMOUNTS OF SELECTED PRODUCTS SHIPPED INTO THE AREA, JANUARY, 1927, TO AUGUST 31, 1928¹

	Cattle	Hogs	Sheep	Poultry	Eggs ⁴	Butter ⁴	Cheese ⁴	Cream	Raw milk	Evapo-rated milk	Oleo ⁴
1927	cars	cars	cars	cut.	cases	cut.	gals.	gals.	cut.	cut.	cut.
January.....	9	1	1		431	4	66	5	784	37	92
February.....	14	...	...		12	3	84	5	596	753	72
March.....	4	...	...		15	3	73	7	976	17	58
April.....	8	...	...		21	2	64	9	363	374	43
May.....	2	...	...		24	2	83	12	093	381	49
June.....	3	...	...		21	1	75	14	191	733	35
July.....	13	...	...		27		58	15	473	18	31
August.....	28	...	6	13	237	154	145	11	776	374	39
September.....	38	*	4	9	778	711	415	16	644	397	236
October.....	43	1	...		143	677	317	14	509	94	43
November.....	12	1	...		233 ²	1235	757	302	11	878	422
December.....					29	1160	668	274	10	862	94
1928											417
January.....	5	...	...		22	1 226	665	254	12	328	95
February.....	7	1	...		22	797	624	245	12	607	740
March.....	8	...	...		15	625	562	293	14	149	94
April.....	2	...	...		26	748	602	271	14	340	928
May.....	3	...	...		7	679	594	297	22	549	769
June.....	6	...	...		32	751	600	349	19	824	23
July.....	14	...	...	1	61	848	636	356	21	196	102
August.....					38	1 621	686	404	22	576	569
Totals for 1927.....	185	2	11	11	507	11 611	7 782	3 777	193 462	1 138 031	4 307
Totals for last 12 months.....	166	2	11								3 407

¹Complete records of shipments were secured for 27 shipping points in area, including all except Crampton, Osco, Orion, and Warner (Fig. 1).²Includes 20,000 pounds of dressed poultry.³Record incomplete.⁴Records for first eight months (January to August, 1927) include only rail shipments.^{*}Less than 1.

TABLE 29.—Continued

	Corn bu.	Oats bu.	Wheat bu.	Hay tons	Feeds cwt.	Seed cwt.	Limestone tons	Fertilizer tons	Sweet potatoes ⁴ cwt.
<i>1927</i>									
January.....	3 000	.....	.....	363	118	450	.....	58	.....
February.....	3	.....	.....	88	136	495	.....	40	.....
March.....	.....	.....	.....	132	580	315	63	67	.....
April.....	.....	.....	.....	220	226	360	30	37	.....
May.....	1 505	1 875	.....	77	276	135	61	25	.....
June.....	1 502	1 875	.....	187	84	315	2	55	.....
July.....	2	3 750	.....	77	84	90	2	25	.....
August.....	.....	.....	.....	11	52	1 485	92	100	.....
September.....	1 500	.....	1 650	.....	45	1 395	4	230	.....
October.....	1 500	.....	.....	66	14	1 125	33	277	.....
November.....	3 000	.....	.....	121	369	23	720	1	379
December.....	18 000	.....	.....	66	1 576	31	270	30	179
<i>1928</i>									
January.....	37 500	.....	.....	198	1 705	62	315	205	.....
February.....	19 500	1 875	3	143	2 280	1 148	450	30	237
March.....	10 500	1 875	.....	44	2 471	2 655	495	218	.....
April.....	25 510	.....	.....	154	2 155	539	180	4	96
May.....	19 500	.....	3	110	1 372	367	315	31	36
June.....	22 500	1 875	.....	187	1 451	116	135	2	12
July.....	30 000	.....	.....	77	1 366	84	.....	32	.....
August.....	13 500	.....	2	192	46	540	32	82	.....
Totals for 1927, 12 months.....	30 012	7 500	1 650	1 408	2 669	7 155	318	1 472	.....
Totals for last 12 months.....	202 510	3 750	1 658	1 166	20 123 ³	5 130	5 940	1 951	.....

³Record incomplete.⁴Records for first eight months (January to August, 1927) include only rail shipments.

*Less than 1.

TABLE 29.—Concluded

	Potatoes	Onions*	Melons	Cabbage	Tomatoes	Lettuce	Celery	Other vegetables	Berries	Apples	Peaches	Pears	Other fruit
<i>1927</i>	<i>bu.</i>	<i>cwt.</i>	<i>cwt.</i>	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>cwt.</i>
January.....	7 703	68	642	34	1 183	275	3 120	1	2 252	1	229	1	229
February.....	6 210	77	202	16	573	2 029	2 029	5	2 720	1	628	1	628
March.....	11 487	102	245	31	222	103	3 626	72	2 243	1	821	1	821
April.....	10 493	77	238	49	412	814	3 430	194	1 116	1	19	1	19
May.....	10 812	64	242	70	165	46	3 003	1 618	468	1	644	1	644
June.....	10 912	55	465	100	112	93	15	2 925	432	200	1 600	1	600
July.....	10 307	27	1 700	40	112	87	28	1 301	43	50	4 050	23	904
August.....	8 628	59	1 260	40	56	79	41	681	1 419	60	400	472	288
September.....	18 303	445	630	76	21	294	180	248	1 738	6 282	479	636	636
October.....	141 780	195	2	623	16	397	22	282	1 698	8 002	368	2 399	2 399
November.....	9 313	102	1 062	1	102	22	193	1 698	4 343	1 920	1	292	292
December.....	2 307	137	673	23	642	412	1 419	1 419	4 122	1 419	2	292	292
<i>1928</i>													
January.....	10 172	147	702	29	533	289	2 472	1 224	1 224	1	220	1	220
February.....	16 608	191	496	43	1 145	208	3 766	1 076	1 076	1	24	1	24
March.....	14 375	219	464	46	621	186	2 984	7	1 000	1	220	6	220
April.....	18 935	190	384	145	855	373	3 406	186	1 199	1	219	4	219
May.....	17 910	447	1 064	484	175	735	94	2 785	6 114	751	408	411	411
June.....	22 685	167	1 264	329	353	424	99	2 714	4 201	408	392	392	392
July.....	6 003	153	3 257	53	518	214	134	1 605	1 605	233	6 563	602	602
August.....	6 542	268	2 438	36	40	169	150	1 068	1 068	234	10 589	412	467
Totals for 1927.....	248 455	1 428	4 059	4 183	562	4 429	2 434	26 710	2 365	24 314	12 332	1 376	9 249
Totals for last 12 months.....	285 133	2 681	7 393	5 382	1 431	6 311	2 566	27 395	10 508	23 330	23 826	1 903	7 433

*Records for first eight months (January to August, 1927) include only rail shipments.

TABLE 30.—AMOUNTS OF SELECTED PRODUCTS SHIPPED OUT OF THE AREA, JANUARY 1, 1927, TO AUGUST 31, 1928¹

	Cattle	Hogs	Sheep	Live poultry	Dressed poultry	Eggs	Butter	Cream	Raw milk	Evapo-rated milk
	cars	cars	cars	cwt.	cwt.	cases	cwt.	gals.	gals.	cwt.
<i>1927</i>										
January.....	94	261	12	43	6	108	...	10,070	...	...
February.....	64	219	..	37	56	189	...	10,800	...	...
March.....	74	186	..	23	1	1,221	...	11,555	...	...
April.....	79	143	..	26	..	2,079	...	14,186	...	...
May.....	71	146	..	11	..	1,708	...	18,381	...	...
June.....	72	257	1	48	28	1,285	...	24,699	...	...
July.....	41	164	..	86	32	256	200	22,087	...	...
August.....	76	207	6	59	92	345	...	20,054	...	...
September.....	68	121	8	17	212	327	...	28,289	...	...
October.....	27	114	7	125	178	113	...	22,017	...	...
November.....	56	184	4	57	10	120	...	13,206	...	...
December.....	28	200	4	37	14	90	...	17,139	...	38
<i>1928</i>										
January.....	68	359	5	47	5	67	...	25,869	...	39
February.....	54	298	3	35	180	81	...	18,848	...	41
March.....	46	228	..	21	152	67	...	23,730	...	399
April.....	46	166	..	25	14	499	1	25,196	...	...
May.....	37	166	..	10	70	467	...	43,397	...	38
June.....	52	202	..	47	44	954	...	32,681	...	39
July.....	34	156	..	83	10	481	...	38,717	...	38
August.....	39	166	..	54	92	370	...	31,087	...	39
Totals for 1927.....	750	2,202	42	569	629	7,841	200	213,143	...	1,234
Totals for last 12 months.....	555	2,360	31	558	981	3,636	1	340,236	...	2,266

¹Complete records were secured for 27 shipping points in the area, including all except Crampton, Oesco, Orion, and Warner (Fig. 1).

*Less than 1.

TABLE 30.—Continued

	Corn	Oats	Wheat	Barley	Rye	Hay	Feeds	Seed	Limestone
	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>bu.</i>	<i>tons</i>	<i>cut.</i>	<i>cwt.</i>	<i>tons</i>
<i>1927</i>									
January.....	9 000	18 750	11 516	1 500	66	7	43	1 800	
February.....	24 000	9 375	9 883	3 000	...	2	8	1 710	
March.....	9 000	7 500	1 650	...	...	4	248	1 800	
April.....	1 500	1 875	1 650	...	...	41	405	495	
May.....	3 000	7 500	4 950	...	...	...	197	180	
June.....	3 020	7 500	4 950	4 500	22	2	14	225	
July.....	3 000	7 500	37 831	6 000	3 000	40	15	495	
August.....	7 500	18 750	42 764	1 000	10 500	88	3	946	5 895
September.....	3 000	1 875	1 650	...	3 000	132	12	186	7 605
October.....	24 000	1 875	3 300	...	...	33	9	101	2 475
November.....	6 000	1 875	6 566	...	55	10	1 900	990	
December.....	4 500	.......	4 950	2 000	1 500	...	7	100	585
<i>1928</i>									
January.....	4 500	5 625	4 933	1 000	1 500	33	7	167	270
February.....	4 500	1 875	3 283	1 000	1 500	...	20	114	1 440
March.....	6 000	.......	3 300	...	3 000	33	28	134	2 340
April.....	1 500	3 750	3 300	...	...	11	29	351	360
May.....	6 000	7 500	4 950	...	3 000	...	7	128	45
June.....	15 000	5 625	3 300	...	...	...	8	18	180
July.....	1 500	.......	16 466	1 000	...	...	8	4	180
August.....	1 500	.......	31 282	5 000	4 500	...	10	7	2 070
Totals for 1927.....	97 520	84 375	131 660	9 000	27 000	396	137	4 163	24 255
Totals for last 12 months.....	78 000	30 000	87 280	9 000	16 500	297	155	3 210	18 540

TABLE 30.—*Concluded*

	Potatoes bu.	Onions cut.	Tomatoes cut.	Other vegetables cut.	Fruit cut.
<i>1927</i>					
January.....	632	278	.....	.....	200
February.....	630	1 350	.....	.....	...
March.....	630	270	.....	.....	...
April.....	635	.....	.....	.....	...
May.....	113	810	.....	.....	...
June.....	7	1 080	.....	60	1
July.....	30	1 350	.....	2 800	240
August.....	612	1 351	.....	.....	...
September.....	885	1 890	.....	.....	...
October.....	3	1 080	.....	.....	2
November.....	...	.....	.....	.....	4
December.....	...	.....	.....	.....	...
<i>1928</i>					
January.....	25	.....	.....	.....	...
February.....	17	.....	.....	.....	1
March.....	2 400	.....	.....	.....	...
April.....	600	.....	.....	.....	...
May.....	5	13 186	10 640	.....	...
June.....	.....	3 766	42 560	.....	...
July.....	.....	9 459	.....	2 860	447
August.....	3 447	21 273	53 200	.....	7
Totals for 1927.....	4 547				
Totals for last 12 months.....					

TABLE 31.—NUMBER OF FARMS REPORTING THE GROWING OF THE PRODUCTS SPECIFIED: HENRY AND ROCK ISLAND COUNTIES, ILLINOIS, AND SCOTT COUNTY, IOWA, 1924¹

Products	Rock Island county	Henry county	Scott county, Iowa
<i>Cereals</i>			
Corn.....	1 630	2 817	1 941
Wheat.....	344	669	889
Oats.....	1 241	2 526	1 670
Barley.....	118	582	292
Rye.....	91	189	95
Buckwheat.....	3	1	4
<i>Hay</i>			
Timothy alone.....	291	706	465
Mixed hay.....	832	1 239	1 128
Clovers.....	274	445	288
Alfalfa.....	417	472	579
<i>Vegetables</i>			
Potatoes.....	1 305	1 741	1 283
Sweet potatoes.....	8	2	3
Cabbages.....	137	19	73
Cantaloupes and muskmelons.....	65	3	9
Lettuce.....	38	4	11
Onions.....	103	18	155
Sweet corn.....	218	77	90
Tomatoes.....	168	19	76
Watermelons.....	33	5	16
<i>Fruits</i>			
Apple trees.....	1 531	2 476	1 877
Peach trees.....	882	1 549	957
Pear trees.....	1 016	1 318	1 052
Plum trees.....	742	1 216	795
Grape vines.....	1 168	1 741	1 280
Strawberries.....	161	42	106
<i>Livestock</i>			
Beef cattle.....	862	2 318	1 038
Dairy cows.....	1 140	1 540	1 262
Cows milked.....	1 630	2 809	2 030
Sheep.....	138	315	107
Swine.....	1 421	2 651	1 650
Chickens.....	1 775	2 845	2 155

¹U. S. Census, 1925.

TABLE 32.—SUMMARY OF FINANCIAL RECORDS ON 44 FARMS
IN THE AREA, 1927

	Average for 44 farms	15 most profitable farms	15 least profitable farms
<i>Capital investment, total</i>	\$49 987	\$57 098	\$43 828
Land.....	34 813	39 716	30 597
Buildings.....	5 275	5 943	4 240
Machinery and equipment.....	1 891	1 945	1 706
Feed, grain, and supplies.....	2 960	3 380	2 385
Livestock, total.....	5 048	6 114	4 900
Horses.....	604	658	506
Cattle.....	2 395	3 572	1 988
Hogs.....	1 844	1 659	2 232
Sheep.....	41	66	4
Poultry.....	164	159	170
<i>Receipts and net increases, total</i>	\$ 5 711	\$ 8 067	\$ 3 823
Feed, grain, and supplies.....	613	1 592	.....
Labor off farm.....	38	58	23
Miscellaneous.....	8	15	6
Livestock, total.....	5 052	6 402	3 794
Horses.....	.....	.....	.....
Cattle.....	1 681	2 854	699
Hogs.....	2 506	2 605	2 209
Sheep.....	38	46	19
Poultry.....	137	171	97
Egg sales.....	160	183	162
Dairy sales.....	530	543	608
<i>Expenses and net decreases, total</i>	\$ 2 166	\$ 2 501	\$ 2 024
Decrease in horses.....	29	10	34
Farm improvements.....	234	268	176
Machinery and equipment.....	519	567	427
Feed, grain, and supplies.....	.....	.....	129
Miscellaneous livestock expense.....	95	69	133
Miscellaneous crop expense.....	226	239	208
Hired labor.....	630	823	530
Taxes, insurance.....	402	493	353
Miscellaneous expense	31	32	34
<i>Receipts less expenses</i>	\$ 3 545	\$ 5 566	\$ 1 799
Operator's and unpaid family labor.....	1 017	1 030	992
<i>Net income from investment</i>	2 528	4 536	807

TABLE 33.—AVERAGE RESULTS FROM 117 FARMS IN WETHERSFIELD TOWNSHIP, HENRY COUNTY, ILLINOIS, 1927¹

Factors helping to analyze the farm business	Average of 117 farms	39 most profitable farms	39 least profitable farms
Rate earned.....	2.3%	6.1%	-1.4%
Labor and management wage.....	\$ -395	\$ 1 137	\$ -1 890
Size of farm, acres.....	182.9	176.6	175.1
Acres in corn.....	67.8	68.4	62.8
Acres in oats.....	30.1	28.9	27.3
Acres in wheat.....	1.6	3.1	.8
<i>Capital investment, total.....</i>	\$39 850	\$38 106	\$39 892
Land.....	30 160	29 072	29 782
Farm improvements.....	4 069	3 814	4 369
Machinery and equipment.....	1 359	1 318	1 375
Feed and supplies.....	1 326	1 304	1 195
Livestock.....	2 936	2 598	3 171
Horses.....	477	493	488
Cattle.....	986	852	1 093
Hogs.....	1 259	1 091	1 404
Sheep.....	106	56	82
Poultry.....	108	106	104
<i>Receipts and net increases, total.....</i>	\$ 3 523	\$ 4 646	\$ 2 311
Feed and grain.....	939	1 842	108
Miscellaneous.....	18	23	23
Livestock, total.....	2 566	2 781	2 180
Cattle.....	469	486	485
Hogs.....	1 447	1 646	1 242
Sheep.....	73	106	23
Poultry.....	105	127	69
Egg sales.....	83	86	67
Dairy sales.....	389	330	294
<i>Expenses and net decreases, total.....</i>	\$ 1 646	\$ 1 411	\$ 1 829
Farm improvements.....	281	228	338
Horses.....	15	1	20
Machinery and equipment.....	384	362	400
Livestock expense other than feed.....	81	55	138
Crop expense.....	138	140	116
Labor hired.....	314	237	393
Taxes, insurance.....	410	362	403
Miscellaneous.....	23	26	21
<i>Receipts less expenses.....</i>	\$ 1 877	\$ 3 235	\$ 482
Operator's and unpaid family labor.....	980	905	1 036
<i>Net income from investment.....</i>	897	2 330	-554
<i>Crop yields, bushels</i>			
Corn.....	36.3	41.4	31.1
Oats.....	34.1	36.2	31.1
Wheat.....	15.9	16.0	17.4
<i>Returns for \$100 invested in all productive livestock.....</i>	\$104	\$123	\$ 83
For \$100 in cattle.....	83	92	66
For \$100 in hogs.....	123	152	98
For \$100 in poultry.....	147	163	115
<i>Crop acres per man.....</i>	78	84.4	65.4
<i>Crop acres per horse</i>			
With tractor.....	24.6	25.3	23.8
Without tractor.....	17.9	18.0	16.9
<i>Gross receipts per acre.....</i>	\$ 19.26	\$ 26.31	\$ 13.20
Total expense per acre.....	14.36	13.12	16.36
<i>Net receipts per acre.....</i>	4.90	13.19	-3.16

¹These data were obtained in December, 1927, from a survey made of practically all farms in the township.

TABLE 34.—NUMBER AND SIZE OF FARMS IN ROCK ISLAND COUNTY, ILLINOIS, 1900-1925¹

	1900	1910	1920	1925
Total number of farms.....	2 058	1 909	2 045	1 857
Average size of farm, acres	120.4	124.6	119.2	121.1
Number of farms				
Under 3 acres.....	9	9	36	...
3 to 9 acres.....	95	104	189	148
10 to 19 acres.....	105	89	109	121
20 to 49 acres.....	342	264	261	233
50 to 99 acres.....	489	447	423	428
100 to 174 acres.....	583	564	577	507
175 to 259 acres.....	258	243	267	250
260 to 499 acres.....	159	174	161	155
500 to 999 acres.....	15	14	21	14
1,000 acres and up.....	3	1	1	1

¹U. S. Census.TABLE 35.—NUMBER OF ACRES IN DIFFERENT CROPS AND NUMBER OF FRUIT TREES, ROCK ISLAND COUNTY, ILLINOIS, 1900-1925¹

	1900	1910	1920	1925
	<i>acres</i>	<i>acres</i>	<i>acres</i>	<i>acres</i>
Corn.....	67 831	62 994	58 508	64 744
Oats.....	24 411	17 963	22 337	24 781
Wheat.....	667	3 173	10 745	5 588
Barley.....	323	1 768	2 653	1 250
Rye.....	3 021	2 975	5 557	2 845
Buckwheat.....	109	702	92	85
Total hay.....	31 392	33 623	34 115	24 922
Alfalfa.....	13	28	719	2 724
Clover.....	918	2 137	3 377	3 832
Other hay.....	30 461	31 458	30 019	17 366
Potatoes.....	2 583	2 246	1 886	1 226
Sweet potatoes.....	21	4	5	8
Other vegetables.....	1 163 ²	801 ¹	429 ²	877 ²
Strawberries.....	54	82	75	75
	<i>number</i>	<i>number</i>	<i>number</i>	<i>number</i>
Apple trees.....	66 253	52 686	43 086	43 385
Peach trees.....	3 400	26 639	5 237	7 898
Pear trees.....	576	4 863	4 746	5 532
Plum trees.....	7 105	10 219	...	5 000
Grape vines.....	48 500	32 532	26 164	66 853

¹U. S. Census; includes home gardens.²Vegetables grown for sale. Does not include farm gardens.³Not available.

TABLE 36.—ORGANIZATION OF THREE SUCCESSFUL FARMS
IN THE AREA, 1925-1927
(Average of three years)

	Beef-cattle feeding and hog farm	Dairy and hog farm	Beef-cattle raising and hog farm
Rate earned.....	8.3%	8.9%	6.0%
Labor and management wage.....	\$3 706	\$1 965	\$1 253
Size of farm, acres.....	380.0	153.3	165.0
Acres in:			
Corn.....	120.3	42.0	62.0
Oats.....	42.0	22.0	31.0
Wheat.....	.....	7.3	.....
Barley.....	31.0	2.5	9.0
Clover hay.....	4.7	1.7	.....
Alfalfa hay.....	16.4	10.7	10.0
Mixed hay.....	7.3	8.3	.....
Total crop acres.....	221.7	94.5	112.0
Acres in tillable pasture.....	73.3	47.7	41.5
Total tillable acres.....	295.0	142.2	153.5
Non-tillable pasture.....	79.7	.6	1.0
Farmstead.....	5.3	10.5	10.5
<i>Capital investment, total</i>	\$90 407	\$32 716	\$51 392
Land.....	52 333	20 933	37 125
Farm improvements.....	15 976	5 693	6 096
Machinery and equipment.....	4 370	1 623	1 009
Feed, grain and supplies.....	5 451	1 479	3 538
Livestock, total.....	12 277	2 988	3 624
Horses.....	1 152	267	995
Cattle.....	6 550	1 628	1 315
Hogs.....	4 268	875	1 114
Sheep.....	.....	95	.....
Poultry.....	307	123	200
<i>Receipts and net increases, total</i>	\$14 619	\$5 025	\$5 585
Feed, grain and supplies.....	.....	293	349
Labor off farm.....	128	270	.....
Miscellaneous.....	.....	39	.....
Livestock, total.....	14 491	4 423	5 236
Horses.....	.....	.....	158
Cattle.....	8 164	593	1 676
Hogs.....	5 306	1 869	2 420
Sheep.....	.....	59	.....
Poultry.....	297	223	494
Egg sales.....	462	65	325
Dairy sales.....	262	1 614	163
<i>Expenses and net decreases, total</i>	\$6 010	\$1 382	\$1 592
Farm improvements.....	638	270	203
Machinery and equipment.....	1 345	280	188
Feed, grain and supplies.....	1 317	.....	.....
Miscellaneous livestock expense.....	91	41	32
Miscellaneous crop expense.....	447	78	208
Hired labor.....	1 420	522	602
Taxes, insurance.....	639	138	334
Miscellaneous.....	91	31	25
Horses, decrease.....	22	22	.....
<i>Receipts less expenses</i>	\$8 609	\$3 643	\$3 993
Operator's labor.....	680	680	720
Unpaid family labor.....	383	42	170
<i>Net income from investment</i>	7 546	2 921	3 103
Investment per acre.....	\$238	\$213	\$311
Gross receipts per acre.....	38.48	32.78	33.85
Total expense per acre.....	18.61	13.72	15.04
Investment per acre in productive livestock.....	\$ 29.28	\$ 17.75	\$15.93
Return per acre from productive livestock.....	38.13	28.85	30.78
Return per \$100 invested in productive livestock.....	130	162	193
Number of men.....	3.0	1.7	1.75
Number of work horses.....	9.3	4.0	8.0
Tractor.....	Yes	Yes	No
Crop acres per man.....	73.9	55.6	64.0
Crop acres per horse.....	23.8	23.6	14.0
Yield of corn per acre, bushels.....	57.7	46.4	58.4
Yield of oats per acre, bushels.....	60.6	55.2	43.9
Yield of wheat per acre, bushels.....	.....	20.9	.....
Yield of barley per acre, bushels.....	41.5	26.0	45.5
Average number of cows.....	6	15.5	15
Average number of brood sows.....	30	16	35
Average number of chickens.....	307	123	200
Average number of steers fed.....	115	.....	25

TABLE 37.—ACRES PER FARM, ROOMS PER HOUSE, AND YEARS OPERATOR HAD FARMED, 412 FARMS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, SEPTEMBER, 1928

	Number of farms	Average acreage	Years operator farmed		Average number of rooms in house
			Anywhere	This farm	
Owners					
0-99 acres.....	51	57.6	13.8	8.6	7.5
100-199 acres.....	61	143.1	18.4	12.1	8.7
200 acres and up.....	28	292.5	20.0	14.3	9.5
Size unknown.....	44	..	22.1	12.7	7.8
All owners.....	184	141.8	17.8	11.5	8.3
Tenants					
0-99 acres.....	34	56.9	14.3	8.0	6.5
100-199 acres.....	63	153.3	13.6	6.0	7.8
200 acres and up.....	49	305.6	15.1	6.8	8.4
Size unknown.....	49	..	14.5	8.0	7.0
All tenants.....	195	182.0	14.3	6.7	7.5
Farms of unknown tenure.....	33	146.7	14.0	8.5	6.8
All farms.....	412	162.2	15.9	8.8	7.8

TABLE 38.—NUMBER OF AUTOMOBILES AND TRUCKS PER FARM, 412 FARMS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, SEPTEMBER, 1928

	Number of Records	Number of automobiles					Number of trucks		
		0	1	2	3	4	0	1	2
Owners									
1 to 99 acres.....	51	2	40	7	1	1	38	12	1
100 to 199 acres.....	61	2	49	9	1	..	38	23	..
200 acres and up.....	28	..	17	8	3	..	15	13	..
Size unknown.....	44	1	34	9	..	..	28	14	2
All owners.....	184	5	140	33	5	1	119	62	3
Tenants									
0-99 acres.....	34	4	24	3	2	1	29	5	..
100-199 acres.....	63	1	50	12	..	..	43	20	..
200 acres and up.....	49	1	37	10	1	..	36	12	1
Size unknown.....	49	4	41	4	..	..	41	8	..
All tenants.....	195	10	152	29	3	1	149	45	1
Farms of unknown tenure.....	33	5	24	3	..	1	29	3	1
All farms.....	412	20	316	65	8	3	297	110	5

TABLE 39.—PERCENTAGE OF HOMES HAVING SPECIFIED ITEMS OF EQUIPMENT: 379 FARMS IN ROCK ISLAND AND HENRY COUNTIES, ILLINOIS, SEPTEMBER, 1928

Size of farm, acres.....	184 owners			195 tenants			Tenure unknown
	All 412 farms	0- 99	100- 199	All	0- 99	100- 199	
<i>Lights</i>							
Home electric plants.....	11	22	21	18	20	15	4
Electricity from power line.....	23	12	31	36	23	17	17
Kerosene or gasoline.....	64	66	43	54	85	78	76
Acetylene or other.....	2	..	5	7	3	3	2
No lights.....	..	..	..	..	..	2	1
<i>Water in kitchen</i>							
Carried by hand.....	75	72	73	50	69	74	71
Pump and sink.....	66	71	75	78	74	63	56
Drain at sink.....	71	66	84	85	78	62	64
Running water at sink.....	27	35	29	54	36	28	18
<i>Bathroom</i>							
With running water.....	20	26	30	41	31	10	9
With toilet.....	17	17	22	39	26	7	9
With septic tank.....	7	24	16	1	14	4	3
With cesspool.....	22	50	28	43	31	15	17
<i>Heat in house</i>							
Stove.....	53	57	25	32	40	61	62
Furnace.....	43	41	68	64	56	36	33
Both.....	4	2	7	4	4	3	5
<i>Cooking stove</i>							
Wood or coal.....	98	94	100	97	97	98	100
Gasoline or kerosene.....	77	85	80	76	79	72	72
Electricity.....	3	..	6	4	..	4	2
Other kinds.....	5	3	4	6	6	..	3

TABLE 39.—*Concluded*

Size of farm, acres	184 owners			195 tenants			Tenure unknown		
	All 412 farms	0-99	100-199	200 up	All	0-99	100-199	200 up	All
<i>Laundry facilities</i>									
Done at home	98	96	98	100	98	100	97	100	98
Machine run by hand	31	35	18	18	26	46	30	31	36
Machine run by power	60	50	77	78	68	30	60	61	52
No machine	9	15	5	4	6	24	10	8	12
Running water in laundry	20	19	29	42	27	7	20	18	13
Drain from laundry	30	36	38	54	39	19	21	35	22
Ice	30	28	36	61	39	7	26	28	20
Electricity	3	2	2	9	4	54	2	5	2
Neither	65	70	55	30	54	93	72	67	78
Both	2	..	7	..	3	..	..	..	..
<i>Refrigeration</i>									
Hand	40	42	58	52	47	27	38	33	34
Electric vacuum	10	7	9	28	13	3	9	9	6
Neither	41	51	31	16	38	70	51	4	44
Both	9	..	2	4	2	..	54	16	..
<i>Cleaning equipment</i>									
Hand vacuum	97	100	92	100	96	100	97	98	98
Electric vacuum	2	..	3	..	2	..	2	2	1
Neither	2	..	5	..	2	..	2	2	..
Both	36	24	52	60	45	4	18	17	19
<i>Sewing machine</i>									
Hand	86	32	40	35	48	42	38	35	36
Power	97	97	97	97	97	97	98	98	98
None	2	..	..	..	..	..	..	..	..
<i>Electric iron</i>									
Other self-heating iron	36	24	52	60	45	4	18	17	19
Cream separator	86	79	97	97	88	88	80	80	80



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